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ABSTRACT

The training manual is designed as a self-study package that will enable Mess Management Specialists Third and Second Class to fulfill the requirements of their rating and qualify for future advancement. Among these requirements are the abilities to perform the following food preparation, food service, and hotel management duties, which are in the manual: (1) operate and manage Navy dining facilities and living quarters established to subsist and accommodate Navy personnel; (2) estimate quantities and kinds of food items required; (3) stow perishable and semiperishable food items; (4) check for quantity and quality and assist medical personnel in their inspection for quality; (5) procure equipment and dinnerware; (6) prepare menus; (7) plan, prepare, and serve meals; (8) maintain food service spaces and associated equipment in a clean and sanitary condition, including storerooms and refrigerated spaces; (9) maintain records of financial transactions and submit required records; and (10) supervise personnel assigned to maintenance duties in living quarters. The text is supplemented by tables and illustrations. Appended materials include the metric system, a glossary, an index, a list of occupational standards for advancement to Mess Management Specialist Third and Second Class, and nine assignments for the independent study course. (Author/BC)

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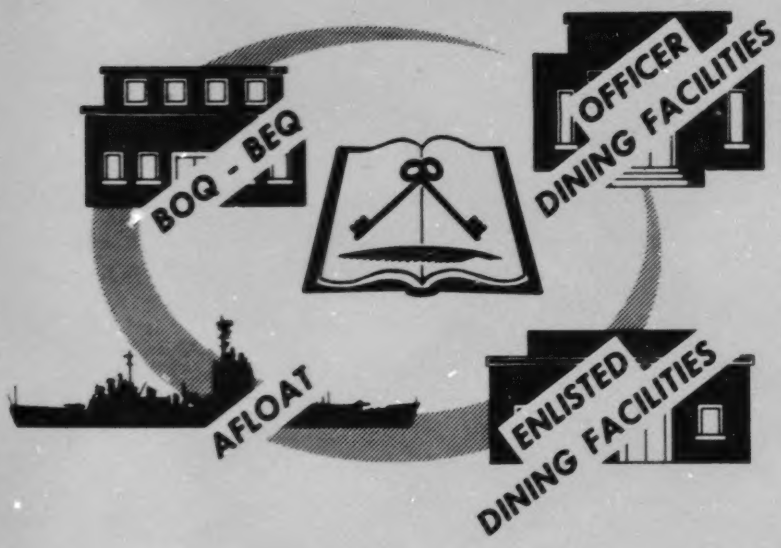
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MESS MANAGEMENT SPECIALIST 3 & 2

NAVAL EDUCATION AND TRAINING COMMAND

RATE TRAINING MANUAL
AND NONRESIDENT CAREER COURSE

NAVEDTRA 10267

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PREFACE

This Rate Training Manual and Nonresident Career Course (RTM/NRCC) form a self-study package that will enable ambitious Mess Management Specialists to help themselves fulfill the requirements of their rating. Among these requirements are the abilities to perform the following food preparation, food service, and hotel management duties: operate and manage Navy dining facilities and living quarters established to subsist and accommodate Navy personnel; estimate quantities and kinds of food items required; stow perishable and semiperishable food items; upon receipt of subsistence items, check for quantity and quality and assist medical personnel in their inspection for quality; procure equipment and dinnerware; prepare menus; plan, prepare, and serve meals; maintain food service spaces and associated equipment in a clean and sanitary condition, including storerooms and refrigerated spaces; maintain records of financial transactions and submit required reports; supervise personnel assigned to maintenance duties in living quarters.

Designed for individual study and not formal classroom instruction, the RTM provides subject matter that relates directly to the occupational qualifications of the Mess Management Specialist rating. The NRCC provides the usual way of satisfying the requirements for completing the RTM. The set of assignments in the NRCC includes learning objectives and supporting items designed to lead students through the RTM.

MESS MANAGEMENT SPECIALIST 3&2 (RTM/NRCC) was prepared by the Naval Education and Training Program Development Center, Pensacola, Florida, for the Chief of Naval Education and Training. Technical assistance was provided by Navy Food Service Systems Office, Washington, DC, Navy Food Management Teams and, Service School Command, Naval Training Center, San Diego, CA.

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THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

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CHAPTER 1

THE MESS MANAGEMENT SPECIALIST RATE

This training manual has been prepared for men and women of the regular Navy and the Naval Reserve, not only to assist you to attain advancement in rating but also to increase your knowledge in the various aspects of the Mess Management Specialist rating. The occupational standards used in the preparation of this manual are contained in the *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards,* NAVPERS 18068-D.

It is recommended that you study occupational field 16 of NAVPERS 18068-D to gain an understanding of the skills and knowledge required of a Mess Management Specialist.

This manual has been organized to give you a systematic understanding of your job. For information about the material covered in the manual, refer to the table of contents. Study this material carefully. It will not only help you toward advancement but will expand your knowledge of logistics operations. This knowledge will enable you to become a more proficient Mess Management Specialist and the Navy will profit from the skills of a proficient craftsman.

One of the most important traits that the Mess Management Specialist must possess is a genuine feeling for people and a sincere desire to help them. In this rating, you will constantly be in direct contact with people. The manner in which you present and conduct yourself in dealing with these individuals does much to improve or destroy the image of your rating, your office, your activity, or the entire naval service.

Your contribution to the Navy depends upon your willingness and ability to accept increasing responsibilities as you advance in rate. When you assume the duties of Mess Management Specialist, you begin to accept certain responsibilities for the work of others. As you advance in your career, you accept responsibilities in military matters as well as the occupational requirements of the Mess Management Specialist rate.

Your responsibilities for military leadership are about the same as those of petty officers in other ratings since every petty officer is a military man as well as a technical specialist. Your responsibilities for technical leadership are special to your rating and directly related to your work as a Mess Management Specialist. The operation and maintenance of Navy dining facilities and living quarters requires teamwork. It requires a special kind of leadership ability that can be developed only by personnel who have a high degree of technical competence and a deep sense of personal responsibility. Strive to improve your leadership ability and technical knowledge through study, observation, and practical application.

ENLISTED RATING STRUCTURE

The two main types of ratings in the present enlisted rating structure are general ratings and service ratings.

GENERAL RATINGS identify broad occupational fields of related duties and functions. Some general ratings include service ratings; others do not. Both Regular Navy and Naval Reserve personnel may hold general ratings.

SERVICE RATINGS identify subdivisions or specialties within a general rating. Although service ratings can exist at any petty officer level, they are most common at the third and second class levels. There are no service ratings in the MS rating. Both Regular Navy and Naval Reserve personnel may hold service ratings.

THE NAVY ENLISTED ADVANCEMENT SYSTEM

Many of the rewards of Navy life are earned through the advancement system. The basic ideas behind the system have remained stable for many years, but specific portions may change rather rapidly. It is important that you know the system and follow changes carefully. BUPERS Notices 1418 will normally keep you up to date.

The normal system of advancement may be easier to understand if it is broken into two parts:

1. Those requirements that must be met before you may be considered for advancement.
2. Those factors that actually determine whether or not you will be advanced.

QUALIFYING FOR ADVANCEMENT

In general, to QUALIFY (be considered) for advancement, you must first:

1. Have a certain amount of time in pay grade.
2. Demonstrate knowledge of material in your mandatory Rate Training Manuals by achieving a suitable score on your command's test, by successfully completing the appropriate NRCCs or, in some cases, by successfully completing an appropriate Navy school.
3. Demonstrate the ability to perform all the practical requirements for advancement by completing the *Record of Practical Factors*, NAVEDTRA 1414/1.
4. Be recommended by your commanding officer.
5. For petty officer third and second candidates ONLY, demonstrate knowledge of military subjects by passing a locally administrated MILITARY/LEADERSHIP examination based on the naval standards for advancement (from NAVPERS 18068 series).
6. Demonstrate knowledge of the technical aspects of your rate by passing a Navywide advancement examination based on the occupational standards applicable to your rate (from NAVPERS 18068 series, those standards listed at and below your rate level).

Figure 1-1 gives a detailed view of the requirements for advancement of active duty personnel; Figure 1-2 gives this information for inactive duty personnel. Remember that the occupational standards can change. Check with your division officer or training officer to be sure that you know the most recent standards.

If you meet all of the above requirements satisfactorily, you become a member of the group from which advancements will be made.

WHO WILL BE ADVANCED?

Advancement is not automatic. Meeting all of the requirements makes you eligible but does not guarantee your advancement. Some of the factors that determine which persons, of all of those QUALIFIED, will actually be advanced in rate are the score made on the advancement examination, the length of time in service, the performance marks earned, and the number of vacancies being filled in a given rate.

If the number of vacancies in a given rate exceeds the number of qualified personnel, then ALL of those qualified will be advanced. More often, the number of qualified people exceeds the vacancies. When this happens, the Navy has devised a procedure for advancing those who are BEST qualified. This procedure is based on combining three personnel evaluation systems:

Merit rating system (Annual evaluation and C.O. recommendation)
Personnel testing system (Advancement examination score—with some credit for passing previous advancement exams)
Longevity (Seniority) system (Time in Rate and Time in Service)

Credit is given for how much the individual has achieved in the three areas of performance, knowledge, and seniority. A composite, known as the final multiple score, is generated from these three factors. All of the qualified candidates from a given advancement examination population are then placed on one

REQUIREMENTS *	E1 to E2	E2 to E3	# E3 to E4	# E4 to E5	E5 to E6	† E6 to E7	† E7 to E8	† E8 to E9
SERVICE	4 mos. service—or completion of Recruit Training.	8 mos. as E-2.	6 mos. as E-3. 2 years time in service.	12 mos. as E-4. 3 years time in service.	24 mos. as E-5. 6 years time in service.	36 mos. as E-6. 8 years time in service.	36 mos. as E-7. 8 of 11 years time in service must be enlisted.	24 mos. as E-8. 10 of 13 years time in service must be enlisted.
SCHOOL	Recruit Training. (C.O. may advance up to 10% of graduating class.)	▨	Class A for PR3, DT3, PT3, AME 3, HM 3, PN 3, FTB 3, MT 3,	▨	▨	Navy School for AGC, MUC, MNC.††		
PRACTICAL FACTORS	Locally prepared check-offs.	Record of Practical Factors, NavEdTra 1414/1, must be completed for E-3 and all PO advancements.						
PERFORMANCE TEST	▨	▨	Specified ratings must complete applicable performance tests before taking examinations.				▨	▨
ENLISTED PERFORMANCE EVALUATION	As used by CO when approving advancement.		Counts toward performance factor credit in advancement multiple.					
EXAMINATIONS **	Locally prepared tests.	See below.	Navy-wide examinations required for all PO advancements.			Navy-wide selection board.		
RATE TRAINING MANUAL (INCLUDING MILITARY REQUIREMENTS)	▨	Required for E-3 and all PO advancements unless waived because of school completion, but need not be repeated if identical course has already been completed. See NavEdTra 10052 (current edition).					Nonresident career courses and recommended reading. See NavEdTra 10052 (current edition).	
AUTHORIZATION	Commanding Officer		NAVEDTRAPRODEVCEN					

* All advancements require commanding officer's recommendation.
† 2 years obligated service required for E-7, E-8, and E-9.
# Military leadership exam required for E-4 and E-5.
** For E-2 to E-3, NAVEDTRAPRODEVCEN exams or locally prepared tests may be used.
†† Waived for qualified EOD personnel.

Figure 1-1.—Active duty advancement requirements.

REQUIREMENTS *	E1 to E2	E2 to E3	E3 to E4	E4 to E5	E5 to E6	E6 to E7	E8	E9
TOTAL TIME IN GRADE	4 mos.	8 mos.	6 mos.	12 mos.	24 mos.	36 mos. with total 8 yrs service	36 mos. with total 11 yrs service	24 mos. with total 13 yrs service
TOTAL TRAINING DUTY IN GRADE†	14 days	14 days	14 days	14 days	28 days	42 days	42 days	28 days
PERFORMANCE TESTS	▨	▨	Specified ratings must complete applicable performance tests before taking examination.					
DRILL PARTICIPATION	Satisfactory participation as a member of a drill unit in accordance with BUPERSINST 5400.42 series.							
PRACTICAL FACTORS (INCLUDING MILITARY REQUIREMENTS)	Record of Practical Factors, NavEdTra 1414/1, must be completed for all advancements.							
RATE TRAINING MANUAL (INCLUDING MILITARY REQUIREMENTS)	Completion of applicable course or courses must be entered in service record.							
EXAMINATION	Standard Exam		Standard Exam required for all PO advancements. Also pass Military Leadership Exam for E-4 and E-5.				Standard Exam, Selection Board.	
AUTHORIZATION	Commanding Officer		NAVEDTRA PRODEVCEN					

* Recommendation by commanding officer required for all advancements.
† Active duty periods may be substituted for training duty.

Figure 1-2. —Inactive duty advancement requirements.

list, based on this composite figure, the highest achiever first, and so on down to the last qualified person in the population. For candidates for E4, E5, and E6, advancement authorizations are then issued beginning at the top of the list, for the number of persons needed to fill the existing vacancies. Candidates for E7 whose final multiple scores are high enough will be designated PASS SELBD ELIG (Pass Selection Board Eligible). This means that their names will be placed before the Chief Petty Officer Selection Board, a BUPERS board charged with considering all eligible candidates for advancement to CPO. Advancement authorizations for those being advanced to CPO are issued by this board.

Who, then, are the individuals who are advanced? Basically, they are the ones who achieved the most in preparing for advancement. They were not content to just qualify; they went the extra mile in their training, and through that training and their work experience they developed greater skills, learned more, and accepted more responsibility.

While it cannot guarantee that any one person will be advanced, the advancement system does guarantee that all persons with a particular rate will compete equally for the vacancies that exist.

HOW TO PREPARE FOR ADVANCEMENT

What must you do to prepare for advancement? You must study the occupational standards, work on the practical factors, study the required rate training manuals, and study other material that is required for advancement in your rate. To prepare for advancement, you will need to be familiar with (1) the *Occupational Standards Manual,* (2) the Record of Practical Factors, (3) a publication called *Bibliography for Advancement Study,* NAVEDTRA 10052 and (4) applicable rate training manuals. The following sections describe them and give you some practical suggestions on how to use them in preparing for advancement.

Occupational Standards

The *Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards,* NAVPERS 18068-D contains the rating occupational and naval standards for advancement to each pay grade in section I. Contained in section II is the Navy Enlisted Classification Codes. This manual replaces the "quals manual" and the NEC manual.

NAVAL STANDARDS are requirements that apply to all ratings rather than to any one particular rating. Naval requirements for advancement to third class and second class petty officer rates deal with military conduct, naval organization, military justice, security, watch standing, and other subjects which are required of petty officers in all ratings.

OCCUPATIONAL STANDARDS are requirements that are directly related to the work of each rating.

Both the naval requirements and the occupational standards are divided into subject matter groups.

You are required to pass a Navywide military/leadership examination for E-4 or E-5, as appropriate, before you take the occupational examinations. The military/leadership examinations are administered on a schedule determined by your commanding officer. Candidates are required to pass the applicable military/leadership examination only once. Each of these examinations consists of questions based on information contained in *Military Requirements for Petty Officers 3 & 2,* NAVEDTRA 10056 (current edition) and in other publications listed in *Bibliography for Advancement Study,* NAVEDTRA 10052 (current edition).

The Navywide occupational examinations for pay grades E-4 and E-5 will contain 150 questions related to occupational areas of your rating.

If you are working for advancement to second class, remember that you may be examined on third class standards as well as on second class standards.

NAVPERS 18068-D is kept current by means of changes. The occupational standards for your rating which are covered in this rate training manual were current at the time the manual was printed. By the time you are studying this manual, however, the standards for your rating may have been changed. Never trust any set of standards until you have checked it against an UP-TO-DATE copy in the NAVPERS 18068-D.

Record of Practical Factors

Before you can take the Navywide examination for advancement, there must be an entry in your service record to show that you have qualified in the naval and occupational standards. The RECORD OF PRACTICAL FACTORS, mentioned earlier, is used to keep a record of your practical factor standards. This form is available for each rating. The form lists all practical factors. As you demonstrate your ability to perform each practical factor, appropriate entries are made in the DATE and INITIALS columns.

Changes are made periodically to the *Occupational Standards Manual* and revised forms of NAVEDTRA 1414/1 are provided when necessary. Extra space is allowed on the Record of Practical Factors for entering additional practical factors as they are published in changes to the *Occupational Standards Manual.* The Record of Practical Factors also provides space for recording demonstrated proficiency in skills which are within the general scope of the rating but which are not identified as minimum occupational standards.

Until completed, the NAVEDTRA 1414/1 is usually held by your division officer; after completion, it is forwarded to the personnel office for insertion in your service record. If you are transferred before qualifying in all practical factors, the incomplete form should be forwarded with your service record to your next duty station. You can save yourself a lot of trouble by making sure that this form is actually inserted in your service record before you are transferred. If the form is not in your service record, you may be required to start all over again and requalify in the practical factors which have already been checked off.

NAVEDTRA 10052

Bibliography for Advancement Study, NAVEDTRA 10052 is a very important publication for any enlisted person preparing for advancement. This bibliography lists required and recommended rate training manuals and other reference material to be used by personnel working for advancement.

NAVEDTRA 10052 is revised and issued once each year by the Chief of Naval Education and Training. Each revised edition is identified by a letter following the NAVEDTRA number. When using this publication, be SURE that you have the most recent edition.

If extensive changes in standards occur in any rating between the annual revisions of NAVEDTRA 10052, a supplementary list of study material may be issued in the form of a BUPERS Notice. When you are preparing for advancement, check to see whether changes have been made in the standards for your rating. If changes have been made, see if a BUPERS Notice has been issued to supplement NAVEDTRA 10052 for your rating.

The required and recommended references are listed by pay grade in NAVEDTRA 10052. If you are working for advancement to third class, study the material that is listed for pay grade E-4. If you are working for advancement to second class, study the material that is listed for pay grade E-5; but remember that you are also responsible for the references listed in the third class level.

In using NAVEDTRA 10052, you will notice that some rate training manuals are marked with an asterisk (*). Any manual marked in this way is MANDATORY—that is, it must be completed at the indicated rate level before you can be eligible to take the Navywide examination for advancement. Each mandatory manual may be completed by (1) passing the appropriate nonresident career course that is based on the mandatory training manual; (2) passing locally prepared tests based on the information given in the training manual; or (3) in some cases, successfully completing an appropriate naval school.

Do not overlook the section of NAVEDTRA 10052 which lists the required and recommended references relating to the naval standards for advancement. Personnel of ALL ratings must complete the mandatory military requirements training manual for the appropriate rate level before they can be eligible to advance.

The references in NAVEDTRA 10052 which are recommended but not mandatory should also be studied carefully. ALL references listed in NAVEDTRA 10052 may be used as source material for the written examinations, at the appropriate rate levels.

Rate Training Manuals

There are two general types of rate training manuals. RATING manuals (such as this one) are prepared for most enlisted ratings. A rating manual gives information that is directly related to the occupational standards of ONE rating. SUBJECT MATTER manuals or BASIC manuals give information that applies to more than one rating.

Rate training manuals are revised from time to time to keep them up to date technically. The revision of a rate training manual is identified by a letter following the NAVEDTRA number. You can tell whether any particular copy of a training manual is the latest edition by checking the NAVEDTRA number and the letter following this number in the most recent edition of *List of Training Manuals and Correspondence Courses,* NAVEDTRA 10061. (NAVEDTRA 10061 is actually a catalog that lists all current training manuals and courses; you will find this catalog useful in planning your study program.)

Each time a rate training manual is revised, it is brought into conformance with the official publications and directives on which it is based; but during the life of any edition, discrepancies between the manual and the official sources are almost certain to arise because of changes to the latter which are issued in the interim. In the performance of your duties, you should always refer to the appropriate official publication or directive. If the official source is listed in NAVEDTRA 10052, the Naval Education and Training Program Development Center uses it as a source of questions in preparing the fleetwide examinations for advancement. In case of a discrepancy between any publications listed in NAVEDTRA 10052 for a given rate, the examination writers will use the most recent material.

Rate training manuals are designed to help you prepare for advancement. The following suggestions may help you to make the best use of this manual and other Navy training publications when you are preparing for advancement.

1. Study the naval standards and the occupational standards for your rating before you study the training manual, and refer to the standards frequently as you study. Remember, you are studying the manual in order to meet these standards.

2. Set up a regular study plan. It will probably be easier for you to stick to a schedule if you can plan to study at the same time each day. If possible, schedule your studying for a time of day when you will not have too many interruptions or distractions.

3. Before you begin to study any part of the manual intensively, become familiar with the entire book. Read the preface and the table of contents. Check through the index. Thumb through the book without any particular plan, looking at the illustration and reading bits here and there as you see things that interest you.

4. Look at the training manual in more detail, to see how it is organized. Look at the table of contents again. Then, chapter by chapter, read the introduction, the headings, and the subheadings. This will give you a pretty clear picture of the scope and content of the book. As you look through the book in this way, ask yourself some questions:

> What do I need to learn about this?
> What do I already know about this?
> How is this information related to information given in other chapters?
> How is this information related to the occupational standards?

5. When you have a general idea of what is in the training manual and how it is organized, fill in the details by intensive study. In each study period, try to cover a complete unit—it may be a chapter, a section of a chapter, or a subsection. The amount of material that you can cover at one time will vary. If you know the subject well, or if the material is easy, you can cover quite a lot at one time. Difficult or unfamiliar material will require more study time.

6. In studying any one unit—chapter, section, or subsection—write down the questions that occur to you. Many people find it helpful to make a written outline of the unit as they study, or at least to write down the most important ideas.

7. As you study, relate the information in the training manual to the knowledge you already have. When you read about a process, a skill, or a situation, try to see how this information ties in with your own past experience.

8. When you have finished studying a unit, take time out to see what you have learned. Look back over your notes and questions. Maybe some of your questions have been answered, but perhaps you still have some that are not answered. Without looking at the training manual, write down the main ideas that you have gotten from studying this unit. Don't just quote the book. If you can't give these ideas in your own words, the chances are that you have not really mastered the information.

9. Use nonresident career courses whenever you can. The courses are based on rate training manuals or on other appropriate texts. As mentioned before, completion of a mandatory rate training manual can be accomplished by passing a nonresident career course based on the rate training manual. You will probably find it helpful to take other courses, as well as those based on mandatory manuals. Taking a course helps you to master the information given in the training manual, and also helps you see how much you have learned.

10. Think of your future as you study rate training manuals. You are working for advancement to third class or second class right now, but some day you will be working toward higher rates. Anything extra that you can learn now will help you both now and later.

SOURCES OF INFORMATION

Besides training manuals, NAVEDTRA 10052 lists official publications on which you may be examined. You should not only study the sections required, but should become as familiar as possible with all publications you use.

One of the most useful things you can learn about a subject is how to find out more about it. No single publication can give you all the information you need to perform the duties of your rating. You should learn where to look for accurate, authoritative, up-to-date information on all subjects related to the naval requirements for advancement and the occupational standards of your rating.

PUBLICATIONS YOU SHOULD KNOW

The chapters of this training manual discuss most of the publications you will use. The detailed information you need for advancement and for everyday work is contained in them. Some are subject to change or revision from time to time, some at regular intervals, others as the need arises. When using any publication that is subject to change or revision, be sure that you have the latest edition. When using any publication that is kept current by means of changes, be sure you have a copy in which all official changes have been made. Studying canceled or obsolete information will not help you to do your work or to advance; it is likely to be a waste of time, and may even be seriously misleading.

TRAINING FILMS

Training films available to naval personnel are a valuable source of supplementary information on many technical subjects. Training films are listed in the *United States Navy Film Catalog*, NAVAIR 10-1-777 (formerly NAVWEPS 10-1-777), published in 1969. Copies may be ordered in accordance with the *Navy Stock List of Forms and Publications,* NAVSUP 2002. Monthly supplements to the Film Catalog are distributed to catalog holders.

When selecting a film, note its date of issue listed in the Film Catalog. As you know, procedures sometimes change rapidly. Thus some films become obsolete rapidly. If a film is obsolete only in part, it may sometimes be shown effectively if before or during its showing you carefully point out to trainees the procedures that have changed.

CHAPTER 2

FOOD SERVICE DIVISION

One of your first tasks as an apprentice is to become acquainted with the organization in which you work and with the functions of that organization. This chapter will explain the role of the dining facilities afloat and ashore as a part of the supply department and will help you understand the lines of authority and the duties of the various personnel in carrying out its primary mission.

The primary mission of the dining facilities (as defined in the *Navy Supply Systems Command Manual*) is to provide Navy and Marine Corps personnel with a well balanced diet by the proper preparation and service of wholesome food items as authorized by the Navy Ration Law. This operation involves a great deal of customer service and personal contact with other Navy personnel, officers and enlisted.

Aboard most ships and shore stations Navy personnel dine in one central dining area with the exception of the officers and CPOs. The dining areas are equipped with modern cafeteria style equipment to keep food and beverages at the proper temperatures.

The daily fixed allowance of food items for each day of the week is determined by the Navy Ration Law. The purpose of the Navy Ration Law is to ensure that there is an adequate, nutritious supply of food items available in all Navy dining facilities. This ration law specifies the daily amount of food authorized for each individual.

The first Navy Ration Law was enacted by Congress in 1794. Since that time many significant changes have been made in the law. The current Navy Ration Law was enacted by Congress in 1933. It contains the same basic guidelines for providing the Navy and Marine Corps personnel with a sufficient quantity of food items; however, significant changes have been made in the quantity of food provided and in the food items available.

Each person so entitled will be served the following quantities daily:

8 ounces biscuit, or 12 ounces soft bread, or 12 ounces flour
12 ounces preserved meat, or 14 ounces salt or smoked meat, or 20 ounces fresh meat or fresh fish or poultry
12 ounces dried vegetables, or 18 ounces canned vegetables, or 44 ounces fresh vegetables
4 ounces dried fruit, or 10 ounces canned fruit, or 6 ounces preserved fruit, or 16 ounces fresh fruit, or 6 ounces canned fruit or vegetable juices or 1 ounce of powdered fruit juices or 6/10 of an ounce of concentrated fruit juices
2 ounces cocoa, or 2 ounces coffee or 1/2 ounce tea 4 ounces evaporated milk, or 1 ounce powdered milk, or 1/2 pint fresh milk
1.6 ounces butter
1.6 ounces cereals, or rice, or starch foods
1/2 ounce cheese
1.2 eggs
1.6 ounces lard or lard substitutes
2/5 gill oils, or sauces, or vinegar
5 ounces sugar
Baking powder, and soda, flavoring extracts, mustard, pepper, pickles, salt, syrup, spices, and yeast as required.

The quality of the food obtained, the use of modern galley equipment, and strict adherence to the tested recipes of the Armed Forces Recipe Service, NavSup P-7 are important factors in maintaining the high standard of meals served throughout the Navy.

You, the mess management specialists who actually prepare the food are equally important. Your skill and your pride in the profession will greatly influence the product you prepare and serve.

A well organized food service division, with well defined responsibilities for all members should result in a smooth, efficient customer service oriented division.

OFFICER RESPONSIBILITY

The commanding officer, executive officer, medical officer, supply officer and food service officer have certain responsibilities regarding the operation of the dining facility. Their duties are outlined in the following paragraphs.

COMMAND RESPONSIBILITY

Your commanding officer has overall responsibility for the entire command.

The commanding officer is responsible for the health, welfare, and morale of the crew. Frequently he will consult the medical officer on sanitary measures and precautions to be taken.

The commanding officer establishes the meal hours according to the routine of the command, and the recommendations of the supply officer. In emergency conditions the officer of the deck has authority to change the meal hours. The officer of the deck must then notify the commanding officer, the supply officer and the food service officer as to the meal hour change and the reason for the change.

The executive officer is the next line officer in command. The responsibilities of the executive officer include:

- Assigning a master-at-arms for the enlisted dining facility from a department other than supply when the Ship's Manning Document (afloat) or a Manpower Authorization Form (ashore) does not provide for one.

- Notifying the food service officer daily, as far in advance of the meal hour as possible, as to the number of personnel that will be absent during meal hours, including personnel on liberty and on working parties. Information regarding the number of rations to be reserved for personnel on working parties or on special details accompanies the notification.

- Providing the food service officer with a ration statement; informally notifying the food service officer regarding the number of rations to be reserved for personnel not present for the meal.

MEDICAL DEPARTMENT RESPONSIBILITY

The medical officer, under the direction of the commanding officer, is responsible for the health and welfare of the ship's company. The responsibilities of the medical officer include:

- Inspecting food items for quality and fitness for consumption.

- Inspecting daily, on an informal basis, all food service personnel and the dining facilities, including all storage areas.

- Submitting weekly sanitation report to the commanding officer as to the condition of the dining facilities and related spaces.

SUPPLY DEPARTMENT RESPONSIBILITY

The mission of the supply department is to provide maximum customer service and support to the command, to attain and maintain the command's highest operational state of readiness and to constantly strive for peak efficiency and preparedness.

Although the enlisted dining facilities are a branch of the supply department aboard all naval activities, the individual organization will differ among commands because of the personnel on board, (ship's company) facilities available, and the unique leadership and professionalism demonstrated by the senior MS. The food service division encompasses all the dining facilities, officer and enlisted, each of which has its own organizational structure.

ACTIVITIES WITH SUPPLY CORPS OFFICERS

When a Supply Corps officer is assigned to a command, the supply officer, under the commanding officer, is directly responsible for the efficient operation of all dining facilities. The supply officer's responsibilities include:

- Ensuring that meals meet nutritional standards, are prepared under sanitary conditions, and are properly displayed and served.

- Ensuring that all personnel assigned to the food service division are properly trained and assigned to duties to which they are suited.

- Ensuring that adequate levels of food items are on hand to meet normal and emergency requirements.

- Reviewing inventories, actual issues, and records as are necessary to ensure the continued availability of balanced stocks and to prevent the accumulation of excesses.

- Inspecting to ensure that food items are stored in such a manner that the oldest pack, either import or domestic, will be issued first, except when the condition of a newer pack requires that immediate issue be made in order to avoid a loss.

At commands having two or more Supply Corps officers, one officer may be assigned as the food service officer. In this capacity the responsibilities of the acting food service officer include:

- Operation of the enlisted dining facility.

- Maintaining control of the expenditures and rendering the Enlisted Dining Facility Operating Statement, NavSup Form 1358 in the name of the food service officer.

ACTIVITIES WITH SUPPLY CORPS OFFICERS

When a Supply Corps officer is not assigned to an activity, the commanding officer is responsible for the entire operation of all dining facilities. The commanding officer may appoint (in writing) a line officer from the command to operate the dining facilities. The officer appointed will be titled "Supply Officer" and will render financial returns in the name of the supply officer. While serving in this capacity, the duties of the appointed supply officer are identical to those of a commissioned Supply Corps officer.

Enlisted Dining Facility Ashore

When one Supply Corps officer is assigned at a shore activity operating a dining facility, this officer performs both supply officer and food service officer duties. At activities requiring both supply and food service officers, the supply officer designates an officer assistant as the food service officer. The supply officer's responsibilities include:

- Procurement, storage, and rotation of food stocks to support the enlisted dining facility.

- Sale and transfer of food items.

- Navy Stock Fund accounting at activities carrying food items in the Navy Stock Account.

- General supervision of food service operations.

- Ensuring that instructions are prepared prescribing food service safety precautions, sanitary regulations and equipment operating instructions.

FOOD SERVICE OFFICER

In this training manual the term "food service officer" will apply to any officer who is in direct charge of an enlisted dining facility afloat or ashore. The food service officer has control of all food items transferred to him for use in the dining facility. The food service officer's responsibilities include:

- Maintenance of an adequate level of food items to meet normal and emergency situations; adequate levels, "stockage objectives," for ships are established and promulgated by the appropriate force commander. See NavSup P-486, Chapter 3 for detailed information.

- Constant supervision of stock upkeep, proper receipt and inspection of food items, proper stowage practices, and the preparation and submission of the enlisted dining facility operating statement.

- Ensuring the proper preparation and serving of food.

- Ensuring proper procedures are followed by MS personnel. The timely submission of all reports pertaining to the dining facility.

- Preparation of orders defining the duties and responsibilities of each billet in the division.

These orders are reviewed by the supply officer, where there is a food service officer as well as a supply officer, and are submitted to the commanding officer for approval. After approval by the commanding officer, the orders are issued in the form of Supply Department Instructions.

FOOD SERVICE DIVISION INSTRUCTIONS

Additional detailed instructions may be written by the food service officer, approved by the supply officer, and promulgated as Food Service Division Instructions. When a person is assigned to the food service division, or to a new job within the division, it is the responsibility of that person to read the part of the instructions which apply to the job and to sign a statement indicating that in the performance of the assigned duties the person will comply with the orders. Whenever you are given such instructions to read, study them carefully, and be sure you understand them. Ask any questions that may occur to you. This is an opportunity for you to get a clear picture of your duties and responsibilities.

DINING FACILITIES AFLOAT

Dining facilities afloat are established by the authority of the U.S. NAVY REGULATIONS. Generally, the type of ship determines the number of dining facilities permitted. Among the facilities that may be established afloat are flag, commanding officer (cabin), unit commander, wardroom, warrant, chief petty officer, and the enlisted dining facilities.

Sale of Shares

Working capital to operate an officers' dining facility afloat is raised through the sale of shares to the members. Only private dining facilities sell shares to its members and only one share is sold to each member. Each member, therefore, becomes an equal partner of the dining facility.

Bills

Each member of the officers' dining facility afloat pays monthly, in advance, the full amount of the bill to the treasurer. The treasurer either estimates the amount of money needed to cover expenses, or establishes a monthly rate and adjusts the operating costs to stay within the budget.

FLAG DINING FACILITY

A flag officer regularly attached to a ship may set up his own dining facility and operate it with personnel assigned to his staff. He may invite officers of his staff to join. Staff officers not invited to join the flag dining facility become members of the wardroom or the warrant officers' dining facility.

COMMANDING OFFICER'S DINING FACILITY (CABIN)

The commanding officer of a ship may form his own dining facility and usually does on ships larger than a destroyer. On most destroyers and smaller ships he dines in the wardroom, as the number of food service personnel and the space on such ships are limited.

WARDROOM DINING FACILITY

The wardroom dining facility subsists all officers, except those subsisting in the flag, commanding officer, or warrant officers' dining facility. Some wardroom dining facilities are divided into two facilities, one for senior officers and the other for junior officers. Such facilities, however, are separate in location only; for operating purposes they are considered as one.

Since the wardroom dining facilities are by far the largest and most numerous of all the various officers' dining facilities afloat, they are the ones referred to throughout this text whenever the officer's dining facility is discussed. Other officers' dining facilities are generally operated in a similar manner.

WARRANT OFFICERS' DINING FACILITY

On some large ships, if space is available, if a sufficient number of warrant officers are assigned, and if an adequate number of food service personnel are available, a warrant officers' dining facility may be established. If one is established, its operation may be completely separate or it may operate with the wardroom facility and have only a separate dining space. This was referred to above as the junior officers' dining facility.

COMMISSIONED OFFICERS' DINING FACILITIES ASHORE

There are two types of officers' dining facilities ashore—the CLOSED dining facility and the OPEN dining facility. They differ in the purposes for which they are established, in the extent of services they offer, and in the type of funds used to pay the operating costs. Both are under the technical control of the Chief of Naval Personnel.

COMMISSIONED OFFICERS' DINING FACILITY CLOSED

The commissioned officers' dining facility CLOSED is established primarily to provide essential lodging and food service for commissioned officers of the Navy on active duty when assigned to, or in a transient status at, the activity operating the facility. Privileges of the facility may be extended to other uniformed personnel, civilians in certain cases, and tenant activities and nearby commands. The *Manual for Messes Ashore,* NAVPERS 15951 lists all authorized patrons of the dining facility.

A dining facility CLOSED may also provide a laundry and dry-cleaning pick up station, barbershop, and other similar services. These services are operated by the Navy exchange.

The operating costs of closed dining facilities (excluding the cost of food items) are paid from appropriated funds (funds appropriated by Congress for this purpose). The CLOSED dining facility ashore is very similar to the wardroom dining facility afloat except that the sale of shares is prohibited. The commanding officer may authorize the use of the officers' dining facility CLOSED for social and recreational functions. However, all operating costs for such functions, including the employment of personnel and the consumption of utilities, must be paid from profits generated through the sale of meals.

BACHELOR OFFICERS' QUARTERS ASHORE

One of the important functions of the officers' dining facility CLOSED is to provide essential lodging for officers. The policy for assigning quarters to officers and for terminating such assignments is established by the commanding officer. Normally, the following order of priority is used in assigning quarters to Navy officers on active duty:

1. Officers not drawing BAQ (in order of seniority), except officers in a travel status
2. Officers drawing BAQ whose dependents did not accompany them (in order of seniority), except officers in a travel status.
3. Officers in a travel status (in order of seniority).
4. Inactive officers of the Selected Reserve performing scheduled inactive duty training.

The commanding officer also has the responsibility for determining the adequacy of officers' quarters. However, quarters are normally assigned as follows:

Permanently assigned officers:

LT and above	Bedroom, living room, and bath
LTJG and below	Combination bedroom/living room and bath

Officers in a travel status

All	Combination bedroom/living room and bath

If the facilities permit, quarters may also be assigned to active duty officers of the other armed services and, under certain conditions, to personnel as specified by the Chief of Naval Personnel.

Front Desk Procedures

The front desk is the contact point for the dining facility operation, and the person manning it should be in the proper uniform, neat, alert, courteous, and well informed.

The new resident should be welcomed, registered, assigned a room, and accounted for. When the occupant leaves, payment for any bills should be received, and the occupant should be properly checked out. In addition to guest procedures, the front desk functions as the control center. Telephone calls and other messages are relayed, and mail is distributed.

Since most situations require an immediate action, it is important that the front desk person be well informed on all common procedures; be familiar with the location of important places on the base such as dispensary, personnel office, disbursing, Navy exchange, and so forth, so that there will be no unnecessary delay in registering or checking out residents or in handling routine problems.

Registration Procedures

Registration has a threefold purpose:

To welcome the officer to the activity.
To accomodate the officer with room, meals, and other services.
To establish a record of the officer's participation in the facility.

A greeting such as "good morning" or "good evening" by the desk watch is appropriate in welcoming new arrivals at the facility. Front desk personnel should be courteous, friendly, and have a helpful attitude to everyone. The customers should not have to address the desk clerk first, nor should they be kept waiting except under unusual circumstances. (Personnel detailed to duty as desk clerks should become familiar with *Navy Customer Service Manual,* NavPers 10119).

Should the officer be checking in, ask for the orders. If there is no question that the officer is eligible for accommodations, keep one copy of the orders for your file and request that the officer fill in the registration card (Registration Record, NavCompt Form 2104, Figure 2-1). A pen should be provided. The back of the card can be used to record the officer's account of charges and payments.

During registration, you should inform the officer of dining facility schedules and be prepared to answer any questions regarding other facilities and schedules. Many dining facilities accomplish this by providing an up-to-date information sheet to new residents. As soon as registration is completed, the patron should be directed to his room.

Post Registration

Just as soon as possible the desk clerk should type/print name slips with the name, rank, and room number of the newly registered officer. One slip is for the room rack, filed numerically; the other is for the information rack, filed alphabetically. The room rack slip indicates that the room is occupied, and therefore no longer available for occupancy. The information rack gives the front desk personnel a ready reference to all registered officers and their room numbers.

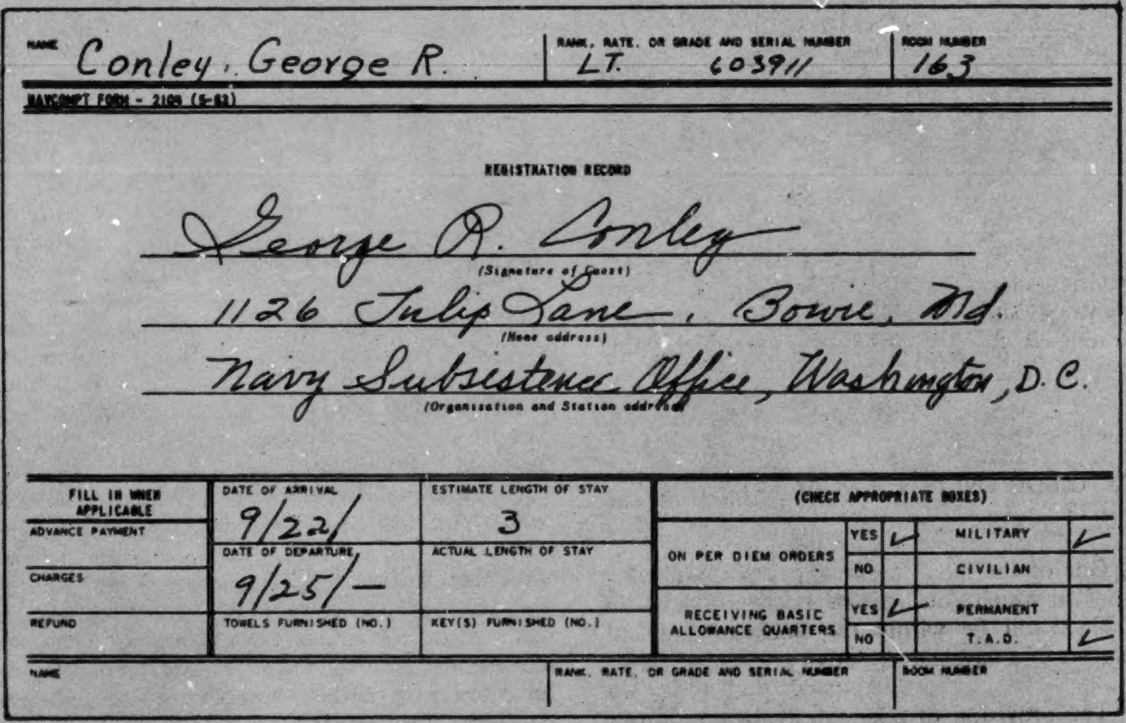
When mail or messages are received they should be sorted out and placed in the appropriate mail slots. When parcels are too large for the rack, notify the officer by placing a message slip on the officer's door and also in the mail slot.

Telegrams and special delivery letters should be given preferential treatment. Have the messenger attempt to reach the officer as soon as possible after the message or letter is delivered to the BOQ. If the officer cannot be located, leave a slip on the officer's door stating that a telegram or special delivery letter is at the front desk. The slip should be timed and dated.

When mail is received for officers who are no longer registered at the facility, it should be returned promptly to the post office with the forwarding address, if known.

Handling Complaints

Complaints by residents are to be expected, and, to a point, welcomed. Many complaints are completely justified and can serve as suggestions for improvements. As the petty officer of the watch, you may be able to handle most complaints with little difficulty. Those you cannot handle, or do not have the authority to handle, should be referred to the treasurer via the senior MS. Never ignore a complaint. No one really expects perfection, but it is irritating when shortcomings that have been explained to the proper persons are not corrected.



NAME Conley, George R.	RANK, RATE, OR GRADE AND SERIAL NUMBER LT. 603911	ROOM NUMBER 163

NAVCOMPT FORM - 2104 (5-62)

REGISTRATION RECORD

George R. Conley
(Signature of Guest)

1126 Tulip Lane, Bowie, Md.
(Home address)

Navy Subsistence Office, Washington, D.C.
(Organization and Station address)

FILL IN WHEN APPLICABLE	DATE OF ARRIVAL 9/22/	ESTIMATE LENGTH OF STAY 3	(CHECK APPROPRIATE BOXES)			
ADVANCE PAYMENT			ON PER DIEM ORDERS	YES ✓	MILITARY	✓
	DATE OF DEPARTURE 9/25/—	ACTUAL LENGTH OF STAY		NO	CIVILIAN	
CHARGES			RECEIVING BASIC ALLOWANCE QUARTERS	YES ✓	PERMANENT	
REFUND	TOWELS FURNISHED (NO.)	KEY(S) FURNISHED (NO.)		NO	T.A.D.	✓

NAME	RANK, RATE, OR GRADE AND SERIAL NUMBER	ROOM NUMBER

85.20

Figure 2-1.—Registration Record, NAVCOMPT Form 2104.

Complaints concerning personnel should be referred to the senior MS. If an officer criticizes personnel, accept the criticism, then report the matter to your immediate supervisor as soon as possible. Under no circumstances should you argue with an officer.

CARE OF QUARTERS ASHORE

Care of quarters ashore is really not too different from that required aboard ship. On shore stations a room attendent will normally be employed (paid for by appropriated funds) to perform bedmaking and similar hotel services. If civilians are not employed, rotational pool personnel will be utilized in accordance with NavOp 1220. In fact, quarters maintenance ashore is usually easier because the spaces are less crowded, there are fewer difficult places to clean, and better use can be made of labor saving equipment.

A well equipped room service cart will save many steps because all required supplies can be taken to the room in one trip. In addition to carrying all cleaning supplies, it should have a place for clean linens, a bag or hamper for soiled linens, and a bag or other container into which wastebaskets can be emptied.

Routine care is normally covered by cleaning schedules which list the jobs that are to be done daily and weekly, and personnel are assigned specific cleaning responsibilities. A room inventory should be taken with each daily cleaning. A checkoff list is usually used for this purpose. Any missing items are indicated on the list, and it is referred to the treasurer for appropriate action.

BACHELOR ENLISTED QUARTERS ASHORE

One of the most interesting, and challenging duties to which you may be assigned as an MS3 or MS2 will be within the Bachelor Enlisted Quarters of a naval shore activity.

The provision of adequate living conditions is a military requirement of high priority, and directly affects the capability of the naval activity to carry out its mission. Naval personnel must be provided with habitable, sanitary, well managed quarters; further the Navy requires the most efficient utilization be made of its multi-million dollar investment in Bachelor Enlisted Quarters Ashore. In order to achieve these goals, guidance has been provided for those involved in bachelor quarters management through a number of important naval instructions. This manual will provide you with general guidelines concerning your role within your station's quarters management organization; however, in order for you to obtain specific guidance, you must be thoroughly familiar with these instructions as you carry out your daily work routine.

Specific details for the management of all Navy Bachelor Quarters are in OPNAVINST 11012.2 series. Bachelor Enlisted Quarters Management is covered in greater depth in OPNAVINST 11101.38 series.

Assignment Desk

Your first duties in quarters will most likely include working at the front desk. As one of the first places incoming personnel encounter, it is imperative that the assignment desk be capable of providing a courteous and expeditious berthing assignment, in a service-oriented, responsive atmosphere. Since first impressions are often lasting ones, this is the point at which the individual should be greeted and be issued the station "Welcome Aboard" pamphlet. It is the assignment desk man who should be able to answer the inquiries of incoming personnel, i.e. meal hours, base transportation, etc. Additionally, it is at this point that the resident should be apprised of his responsibilities while living in the quarters.

The assignment desk is the single contact point for the issue of room assignments and keys. Utilization of this method in the assignment to bachelor housing results in tighter control, better accountability, fuller utilization and more accurately reporting of matters concerning the availability and capacity of quarters, i.e., the number of per diem authorizations granted.

Where physical facilities do not permit guests and visitors access to the functional living area of the occupant, a special emphasis should be placed on the appearance of the assignment desk area, as it will serve as the locator and waiting/meeting area for the occupants and their guests.

The assignment desk will:

(1) Administer the provisions of OPNAVINST 11012.2 (series) and all pertinent Navy and local bachelor housing instructions.

(2) Provide check-in/check-out service 24 hours a day, seven days a week.

(3) Maintain locator file, both alphabetically and by room assignment on all occupants.

(4) Assign all personnel to a room.

(5) Compile a daily occupancy report.

(6) Provide the same caliber of service normally expected from a hotel/motel front desk.

(7) Maintain strict and accountable room key controls.

(8) Provide issue of linen.

(9) During non-working hours, the assignment desk personnel are the BEQ officer's representatives.

The Assignment Desk Petty Officer is directly responsible to the BEQ officer or complex manager for the assignment of occupants to specific rooms, and the accountability of room keys, furniture and linen.

As you can see from the preceding, your duties will be varied and interesting. It is essential that you develop a courteous and helpful manner while working at the assignment desk, in addition to your technical knowledge of the assignment criteria in OPNAV 11012.2 series for Navy bachelor quarters. The incoming occupants should not have to address the assignment desk attendent first, nor should they be kept waiting except under unusual circumstances. Personnel detailed to duty at assignment desks should be familiar with OPNAV Instruction 11101.38 (series) *BEQ Management*, and with the *Navy Customer Service Manual*, NAVPERS 10119.

REGISTRATION PROCEDURES.–After greeting the incoming occupant, ask for orders, and examine them carefully. There are significant differences in the type accommodations allotted to personnel based upon the type of orders which they hold. Ensure that you make the correct quarters assignment in accordance with OPNAVINST 11012.2 (series) the first time.

After insuring that the new resident knows how to get to the room and after answering any questions that might have been asked, you should as quickly as possible, prepare name slips containing the new occupants name, rate/rank and room number. One slip is for the room listing index, filed by room number, and the other will be filed alphabetically in the locator file. The room slip indicates that the room is occupied, while locator slip is a ready reference to all occupants and their room assignments.

Incoming messages of a routine nature should be received in the assignment desk area. In those BEQ's equipped with "intercom" systems, the individuals should be notified of messages until 2200. In BEQ's without "intercom" systems, a message board should be provided. Navy BEQs do not normally handle mail, the occupants receive personal mail at their work location.

HANDLING COMPLAINTS.–Complaints by residents are to be expected, and, to a point, welcomed. Many complaints are completely justified and can serve as suggestions for improvements. As the assignment desk petty officer, you may be able to handle most complaints with little difficulty. Those you cannot handle, or do not have the authority to handle, should be referred to the BEQ officer. Never ignore a complaint. No one really expects perfection, but it is irritating when shortcomings that have been explained to the proper persons are not corrected.

Care and Maintenance of Quarters

The basic procedures for the care of Navy Bachelor Quarters ashore are detailed in *The Military Custodial Services Manual* MO-125. Copies of this manual are available from your BEQ officer, or public works center. In serving as a BEQ building manager, you will need a perfect knowledge of chapter 2 which provides detailed instructions for preparing work analysis forms, and cleaning schedules for your particular quarters. You will find the care of quarters ashore is really not too different from that required aboard ship. If civilians are not employed, custodial cleaning personnel will be provided in accordance with OPNAVINST 11101.38. In fact, quarters maintenance ashore is usually easier because the spaces are less crowded, there are fewer difficult places to clean, and better use can be made of labor saving equipment.

Additional information concerning quarters maintenance may be found in the following Naval Facilities Engineering Command manuals:

(1) NavFac P-309, *The Application of Color to the Shore Establishment.*
(2) NavFac MO-100 *Grounds Maintenance.*

CARE OF QUARTERS AFLOAT

Basic maintenance service of officers staterooms such as sweeping, dusting, sink cleaning and painting as required will be provided afloat by the rotational pool personnel. This pool will be formed of personnel from various divisions (and squadrons if they are on board) and the personnel are normally assigned to such duties by the executive officer. They are normally under the direct supervision of the senior MS assigned to the officer dining facility or dining hall master-at-arms.

Daily cleaning is necessary, but the extent to which spaces are cleaned may vary with circumstances. Limited cleaning may be done each day with a major effort on field day, or the work load may be spread over the entire week. The advantages to spreading the work load over the entire week are:

- There can be a more equitable distribution of work.

- Cleaning schedules can conform to other schedules. For example, linens–bed sheets, pillow cases, towels, may be issued on the day the officers sent their lanundry to the ship's cleaner/laundry.

- More attention can be given to all jobs when they are performed throughout the week rather than crowded into one day.

Work should be scheduled so as to make the most efficient use of available manpower and time. Good daily cleaning makes field day much easier. The following tasks should be considered as the minimum daily cleaning under ordinary circumstances.

- Empty and wash ashtrays.

- Dust furniture and sweep and mop deck.

- Clean mirror, washbasin, soap container, and toothbrush holder.

- Empty wastebasket.

The people assigned should be impressed with the importance of the proper care of cleaning materials. Cleaning materials should be correctly stowed after each use to prevent loss or damage. Mops should be washed, rinsed, and spread or hung to dry, not stood in a corner to sour. Obvious cleaning jobs, such as washing dirty paintwork resulting from plumbing or electrical repairs, should be performed as necessary and not put off until the day that the paintwork is scheduled to be washed.

The major cleaning jobs that are normally performed weekly are:

- Paintwork checked carefully and scrubbed as needed.

- Brightwork polished.

- Knife edges of hatches and edges of ports cleaned.

- Soiled towels removed and clean ones issued.

- Deck scrubbed and waxed.

- The staterooms should be inspected frequently by the room supervisor to ensure that these duties are being performed properly, and to request any maintenance or repair work that must be done by the engineering department.

HANDLING CASH

Your duties may involve handling cash receipts at the front desk or in the dining room or making cash purchases for the dining facility. Any funds entrusted to your care must be handled strictly according to the established procedures without taking any shortcuts. This will reduce the chance of error or shortage. As a cashier you are held responsible for all funds in your custody.

Cash purchases usually involve receiving a cash advance from the treasurer, making the purchase, and returning the receipt and all remaining cash. An imprest fund or petty cash fund may be authorized and will be held by a designated custodian. The custodian may make all purchases, or may advance cash to others for this purpose. Should you be designated as custodian of an imprest fund or petty cash fund, you will be given instructions concerning the proper use of that fund.

You are more likely to be involved with collecting cash for service charges and meals. These duties normally include:

- Obtaining and counting the change fund.
- Operating the cash register.
- Receiving payments and making change.
- Cashing checks (if authorized).
- Counting cash receipts.
- Preparing the daily activity record.

Change Fund

A change fund is an amount of money advanced to a cashier for use in making change. Each cashier signs a receipt for the total value of the change fund and is responsible for it. It is very important, therefore, that you count the change fund BEFORE signing for it to ensure that no error has been made.

The cashier normally receives the change fund before going on duty and returns it with the receipts when relieved or when the change fund is passed to a relieving cashier instead of being turned in with the cash receipts. In this case, the relieved cashier obtains a signed receipt from the relief.

The Cash Register

Cash registers are normally used at each dining facility location where the collection of money is a regular, daily occurrence. The use of a cash register is particularly desirable when written records are not made of each transaction. When a cash register is not available or its use is not practical, a cash box or drawer may be used. The following discussion applies to the use of cash registers, but parts of it are also applicable, with modifications, to the use of a cash drawer or box for cash transactions.

A cash register should give years of service if it is not mistreated. Operating characteristics of the different makes and models vary widely, but most of them perform the same function.

In addition to keys for recording the amount of the transaction, special keys may be provided to indicate "cash sales," "paid out," and "no sale." When more than one cashier uses the same cash register, special keys can be used to identify the cashier handling the transaction. One of the more important functions performed by the cash register is the cumulative totals provided by its registers. Normally, a register is provided for each special key plus a grand total register. The registers are concealed by a locked cover which can be opened only by a key retained by the treasurer or a designated representative. The register totals are obtained by unlocking the cover and reading them visually or by printing out the totals on cash register tape.

A key is also provided to lock the cash register. This key should be held by the cashier. Whenever it is necessary for the cashier to leave the vicinity of the cash register, it should be locked to prevent access by unauthorized persons. This key should be passed to the next cashier or left in the cash register after the cash has been collected. The cash drawer of an empty cash register should always be left visibly open.

Special compartments are provided in the cash drawer for the various denominations of coins and bills. You may use whatever sequence you prefer in distributing coins and bills in the compartments, but it should be consistent, and different denominations of coins or bills should not be mixed in one compartment. If the coins and bills are mixed, making change will be more complicated and the possibility of error will be increased. When new bills are received, a corner should be turned down on each one to prevent them from sticking together. Checks and large bills may be placed in separate compartments or beneath the tray of the cash drawer.

Payments and Change

As a cashier you should develop correct habits for handling payments from the patrons. There are five steps which you should follow in any cash transaction.

(1) COUNT ALL MONEY you handle carefully. This includes the change fund, the money you receive from customers, and any additional change you have to obtain during the watch.

(2) REPEAT ALOUD THE AMOUNT OF MONEY HANDED TO YOU, as well as the amount of the sale. By doing this for every sales transaction, you avoid the chance of becoming confused, or the chance of the customer being mistaken about the amount of money given to you. For example, as the person hands you the money, you should say, "Thank you, that will be $4.35 out of $5."

(3) LEAVE THE AMOUNT RECEIVED ON THE CHANGE PLATE until you count the change from the cash drawer. If someone interrupts you or you forget, you will have the exact amount received in front of you just below the keys of the cash register. Consequently there can be no question as to the correct amount.

(4) COUNT THE CHANGE TWICE–first as you take it from the cash drawer, and again as you give it to the customer. Start counting the change from the amount rung until you build up to the amount received. For example, if you ring up $4.35 out of $5, you would pick up a nickel and a dime from the drawer and count aloud, "Four forty, four fifty," and then pick up two quarters and count, "Four seventy-five, five dollars." Repeat in the same manner as you count the change into the customer's hand. If you or the customer finds an error in the count, take back all the change, make the correction, and then count the change correctly. Be very careful not to put the customer's money into the cash drawer until you have counted out the change and the customer has accepted it.

(5) HANDLE ONLY ONE TRANSACTION AT A TIME. Concentrate on one customer exclusively. Take money from only one person at a time. Ring up one sale at a time. Close the cash drawer after completing each transaction.

Cashing Checks

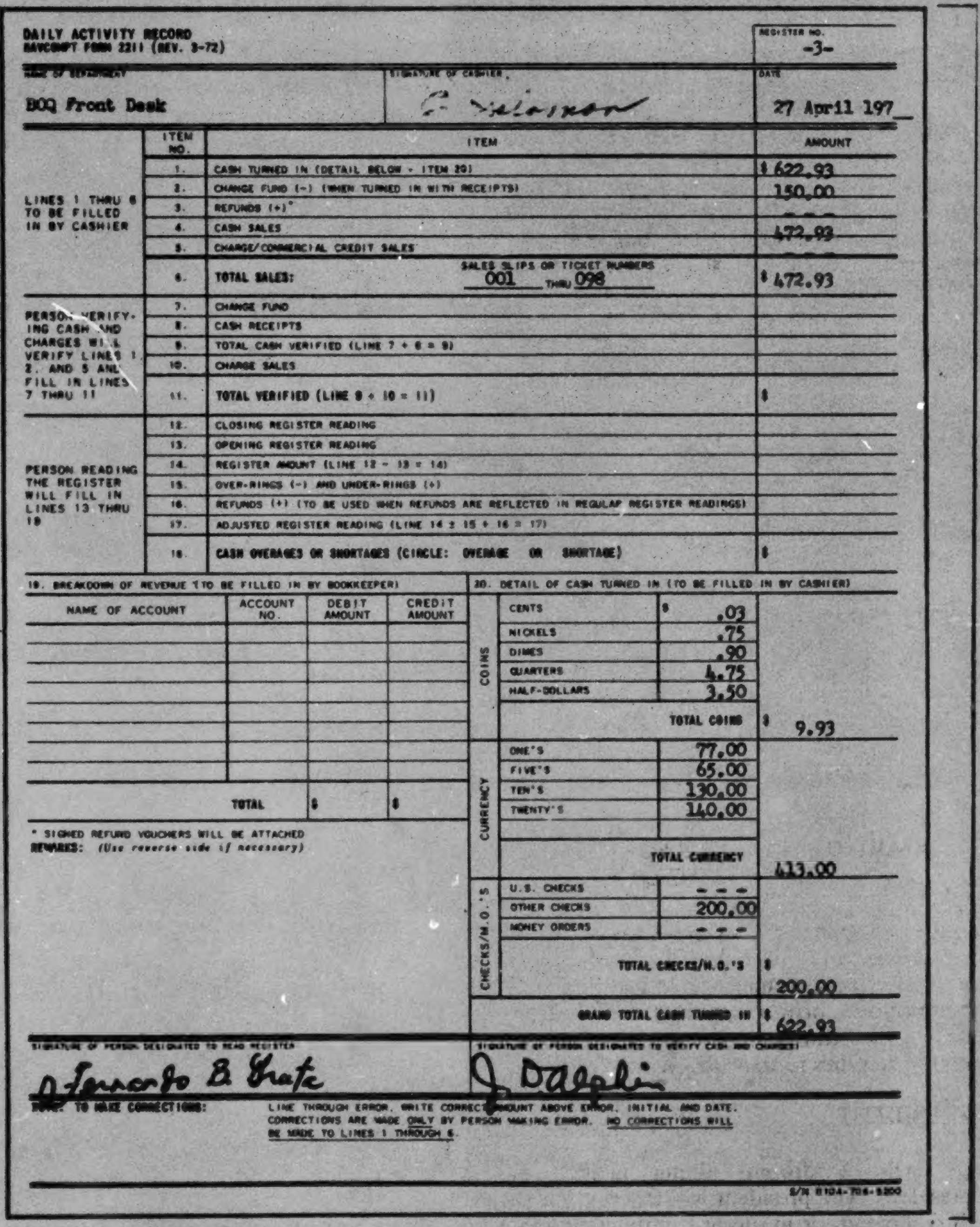
Each facility establishes its policy for cashing checks. As a cashier, your first responsibility will be to thoroughly familiarize yourself with that policy. Usually it will specify which cashiers may cash checks and the maximum amount for which a check can be cashed. This limitation is necessary because most cashiers do not keep a large amount of cash in their cash registers, and cashing large checks could deplete the cash needed for making change.

When accepting checks, either in payment for charges or for cashing, you must ensure that they are properly drawn.

- They should be written in ink or indelible pencil.
- They must be dated and signed.
- They must not contain corrections or erasures.
- The amount shown in figures must agree with the amount written out.
- The information on the check should correspond with the personal identification.

Closing Out

At the close of business or at the end of your watch, you must close out the cash register. The results of this "closing out" are shown on the Daily Activity Record, NavCompt Form 2211 (Figure 2-2). The cashier fills in the heading of the form and completes lines 1



DAILY ACTIVITY RECORD
NAVCOMPT FORM 2211 (REV. 3-72)

REGISTER NO. -3-

NAME OF DEPARTMENT: BOQ Front Desk

SIGNATURE OF CASHIER:

DATE: 27 April 197_

	ITEM NO.	ITEM	AMOUNT
LINES 1 THRU 6 TO BE FILLED IN BY CASHIER	1.	CASH TURNED IN (DETAIL BELOW - ITEM 20)	$ 622.93
	2.	CHANGE FUND (-) (WHEN TURNED IN WITH RECEIPTS)	150.00
	3.	REFUNDS (+)*	– – –
	4.	CASH SALES	472.93
	5.	CHARGE/COMMERCIAL CREDIT SALES	– – –
	6.	TOTAL SALES: SALES SLIPS OR TICKET NUMBERS 001 THRU 098	$ 472.93
PERSON VERIFYING CASH AND CHARGES WILL VERIFY LINES 1, 2, AND 5 AND FILL IN LINES 7 THRU 11	7.	CHANGE FUND	
	8.	CASH RECEIPTS	
	9.	TOTAL CASH VERIFIED (LINE 7 + 8 = 9)	
	10.	CHARGE SALES	
	11.	TOTAL VERIFIED (LINE 9 + 10 = 11)	$
PERSON READING THE REGISTER WILL FILL IN LINES 13 THRU 18	12.	CLOSING REGISTER READING	
	13.	OPENING REGISTER READING	
	14.	REGISTER AMOUNT (LINE 12 - 13 = 14)	
	15.	OVER-RINGS (-) AND UNDER-RINGS (+)	
	16.	REFUNDS (+) (TO BE USED WHEN REFUNDS ARE REFLECTED IN REGULAR REGISTER READINGS)	
	17.	ADJUSTED REGISTER READING (LINE 14 ± 15 + 16 = 17)	
	18.	CASH OVERAGES OR SHORTAGES (CIRCLE: OVERAGE OR SHORTAGE)	$

19. BREAKDOWN OF REVENUE (TO BE FILLED IN BY BOOKKEEPER)

NAME OF ACCOUNT	ACCOUNT NO.	DEBIT AMOUNT	CREDIT AMOUNT
TOTAL		$	$

* SIGNED REFUND VOUCHERS WILL BE ATTACHED

REMARKS: *(Use reverse side if necessary)*

20. DETAIL OF CASH TURNED IN (TO BE FILLED IN BY CASHIER)

COINS	CENTS	$ .03	
	NICKELS	.75	
	DIMES	.90	
	QUARTERS	4.75	
	HALF-DOLLARS	3.50	
	TOTAL COINS		$ 9.93
CURRENCY	ONE'S	77.00	
	FIVE'S	65.00	
	TEN'S	130.00	
	TWENTY'S	140.00	
	TOTAL CURRENCY		413.00
CHECKS/M.O.'S	U.S. CHECKS	– – –	
	OTHER CHECKS	200.00	
	MONEY ORDERS	– – –	
	TOTAL CHECKS/M.O.'S		$ 200.00
	GRAND TOTAL CASH TURNED IN		$ 622.93

SIGNATURE OF PERSON DESIGNATED TO READ REGISTER: Fernando B. Grate

SIGNATURE OF PERSON DESIGNATED TO VERIFY CASH AND CHARGES: J. Dalplin

NOTE: TO MAKE CORRECTIONS: LINE THROUGH ERROR, WRITE CORRECT AMOUNT ABOVE ERROR, INITIAL AND DATE. CORRECTIONS ARE MADE ONLY BY PERSON MAKING ERROR. NO CORRECTIONS WILL BE MADE TO LINES 1 THROUGH 6.

S/N 0104-704-5200

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85.21

Figure 2-2.—Daily Activity Record, NAVCOMPT Form 2211.

through 6. All cash in the cash register, including checks, are counted and the total entered on line 1. From this total you should subtract the amount of the change fund received (line 2). The difference represents the total cash receipts.

The cash count is then verified and the cash register readings should be taken by the treasurer or a designated representative. The person who verifies the readings completes the form and reconciles any difference between net sales, as represented by the cash register readings, and the actual cash turned in. Dining facilities participating in the centralized accounting system should follow the procedures outlined in NavSo P-3518 in preparing and processing the Daily Activity Report, NavCompt Form 2211.

OFFICERS' DINING FACILITY OPEN

The commissioned officers' dining facility OPEN is operated to provide meals and refreshments, and to promote social and recreational activities.

Operating Costs

The operating costs of the OPEN dining facility are paid from nonappropriated funds. Personnel involved in operating the OPEN dining facility are civilian and are paid from nonappropriated funds.

BOARD OF OFFICERS FOR OFFICERS' DINING FACILITY

Each dining facility has a board of officers consisting of: president, treasurer, caterer, wardroom officer, manager and audit board. The commanding officer appoints these officers (in writing) for the purpose of ensuring that all dining facilities regulations are carried out.

PRESIDENT

Each wardroom dining facility has a president. The president is the senior line officer in command, or in succession to command, who is a member of the wardroom dining facility. The president presides at meals and is charged with preserving order. In small ships, the president is the commanding officer. In large ships, the executive officer is the president.

Ashore, the senior officer, who is a permanent resident of the bachelor officers' quarters, is normally appointed as president of the dining facility by the commanding officer.

TREASURER

Afloat, the treasurer is appointed from among the members and is responsible for the finances of the dining facility. The treasurer ensures that bills are paid, that accounts are kept properly, and that required financial reports are prepared. All officers, except those charged with the custody and disbursement of public funds, are eligible for appointment. The commanding officer normally determines the length of time an officer will serve as treasurer. The treasurer may also be assigned the duties and perform the functions of a caterer.

Ashore, the treasurer is appointed by the commanding officer and usually serves in this capacity for the entire tour at the activity. In addition to the duties for the treasurer afloat (discussed later in this chapter), the member may also serve as division officer for assigned enlisted personnel at the officer dining facility.

CATERER/WARDROOM OFFICER

The caterer is appointed by the commanding officer. The caterer's responsibilities include:

- Supervising the planning of the menus.
- Supervising the procurement and preparation of the food items.
- Supervising the serving of the meals.
- Maintaining the orderliness and sanitation of the wardroom, officer's quarters, and associated spaces.
- Training and supervising assigned personnel.

Not all ships have both a treasurer and a caterer. On ships which have no caterer, the treasurer is responsible for all operations of the dining facility.

The duties of the treasurer and the caterer are collateral and are performed in addition to the officer's regularly assigned duties. On some large ships such as carriers, however, an officer may be assigned the primary duty of wardroom officer and, as such, assumes the duties of both the treasurer and caterer.

The responsibility for the operation of the officer's dining facility may rest with the wardroom officer or it may be shared by the treasurer and the caterer. Therefore, the term "treasurer" is used in this text to refer to the general responsibility for officer's dining facility operation. When referring to specific duties, the appropriate job title is used.

MANAGER

Regulations do not provide for a caterer ashore. Instead, a civilian manager may be employed to assist the treasurer if, in the opinion of the commanding officer, the affairs of the dining facility can be handled more efficiently by a civilian manager. The manager would be responsible for the actual day-to-day operation of the dining facility, and the duties would be similar to those of the caterer.

When a manager is employed, the commanding officer may eliminate the position of the treasurer and assign all duties and responsibilities to the manager except division officer duties.

The length of time the treasurer, caterer, and wardroom officer serve in their appointed positions is determined by the commanding officer.

AUDIT BOARDS

Other officers who have responsibilities to the officers' dining facility are members of the audit and inventory board. Members of this board are appointed by the commanding officer. They audit the treasurer's accounts, inventory the cash and stock each month, and submit a report to the commanding officer. You may be assigned to assist them in taking inventory.

ENLISTED RESPONSIBILITIES

The enlisted personnel are the main body of the food service division. In addition to MS personnel and Storekeepers, petty officers and nonrated personnel from other divisions may be assigned to the division. These persons will normally be assigned as master-at-arms and food service personnel. The responsibilities of these persons are outlined in the following paragraphs.

MASTER-AT-ARMS

The billet for a master-at-arms may be written into the ship's manning document (afloat). When this is the case, the master-at-arms will be a permanent member of the supply department and will be directly responsible to the senior MS. When this is not the case, the master-at-arms will be assigned by the executive officer for a period of at least 90 days and will coordinate the assigned duties with those of the senior MS but will work directly for the food service officer or a designated representative.

The master-at-arms is charged with the following responsibilities:

- Supervises the cleaning of the dining facility, decks, serving line, scullery, and all dining facility equipment in that area, and in related areas, except that which comes under the supervision of the senior MS.

- In coordination with the senior MS, assigns food service personnel to the serving of food, maintenance and cleanliness of dining areas and equipment, the operation of the scullery, the handling and disposal of food wastes.

- Rotates food service personnel within the rotational pool to effectively implement the work schedule.

- Musters the food service personnel daily and thoroughly inspects for neatness and personal hygiene.

- Ensures that all food service personnel are fully qualified and properly trained in the correct operating procedures for the scullery equipment.

- Ensures that the scullery equipment is in proper working order.

- Supervises cleaning of the scullery equipment and of the surrounding area.

- Ensures that all refuse is promptly removed from food service spaces, and that refuse areas and containers are kept clean.

- Conducts weekly inventories to ensure that there is a sufficient amount of dinnerware available to accommodate all patrons at any one meal without having to wash and reuse any of the dinnerware coming directly from the scullery.

- In conjunction with the medical department, administers a training program for all food service personnel in sanitation, food handling, and scullery operation.

FOOD SERVICE PERSONNEL

The food service personnel are the enlisted members who are temporarily assigned to the various dining facilities. They are assigned for a period of 90 days. While serving in this capacity, the food service personnel will be in a rotational pool. Their duties include any or all of the following:

- Serving food on the serving line.

- Maintaining cleanliness and sanitation of the spaces and equipment.

- Operating the scullery and handling and disposing of food wastes.

- Loading and unloading supplies for the dining facility.

- Being detailed to work in the vegetable preparation room and to wash cooking and baking utensils in the galley and bakery.

Petty officers and noncommissioned officers are not detailed as food service personnel except when nonrated personnel are not available.

RECORDS SECTION PERSONNEL

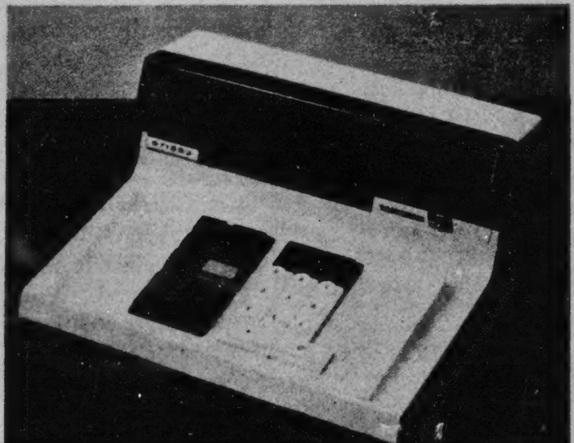
The records section of the food service division is under the supervision of the food service officer. Normally, the enlisted people assigned to that section are Storekeepers or Mess Management Specialists. Although you may not have specific recordkeeping duties in the office, you should be aware of what records are kept and of the recordkeeping equipment used, because they relate to your own duties in particular and to the efficient operation of the food service division as a whole. Working directly under the food service officer, the recordskeeper is responsible for:

- Keeping all of the records, log books, and files of the division, including the subsistence survey log, subsistence ledger, inventory records, stock records, record of receipts and expenditure, control record, correspondence files, and other local records.

Office Equipment

CALCULATORS.–One of the most useful and versatile machines in the office is the calculator. As they are capable of adding, subtracting, multiplying, and dividing, their use is a must in performing many of the calculations necessary to recordskeeping work. There are three general types of calculators found in the Navy today; the rotary calculator, the rotary-printing calculator, and the electronic solid-state calculator. The same general principles apply for operating all rotary calculators, but the keyboard arrangements and steps involved in the operation vary slightly depending on the manufacturer and the particular model. You will have to learn about the operation of your machine from an experienced operator and by studying the manufacturer's instruction booklet. The basic difference between the two types of rotary calculators is that the rotary-printing calculator produces a tape in much the same manner as an adding machine while the rotary calculator does not. A recent and widely accepted entry into the calculator market is the solid-state electronic computer. Figure 2-3 illustrates one of the more popular models in use. Its keyboard is arranged in the standard ten key pattern and the operating keys are similar to those of standard rotary calculators. However, it has additional keys which are used to insert mathematical signs such as decimal points, and for the storage and recall of numbers. Numbers inserted for the computations and the answers are instantly projected by a cathode ray onto a small TV-like screen located at the top of the machine. It has a number of advantages over rotary calculators because of its simplified operation, remarkable speed, silent-operation, and the fact that it requires little maintenance. To learn how to operate an electronic calculator, you will need instruction from an experienced operator or company representative.

TO PREVENT ELECTRICAL SHOCK, NEVER OPERATE ANY CALCULATOR WITHOUT ENSURING THAT THE MACHINE IS GROUNDED. HAVE A QUALIFIED ELECTRICIAN CHECK THE GROUNDING CONNECTIONS. DO NOT USE A CALCULATOR DURING SEVERE ELECTRICAL STORMS, WHILE STANDING OR SITTING WITH YOUR FEET ON A WET DECK, OR WITH WET HANDS.



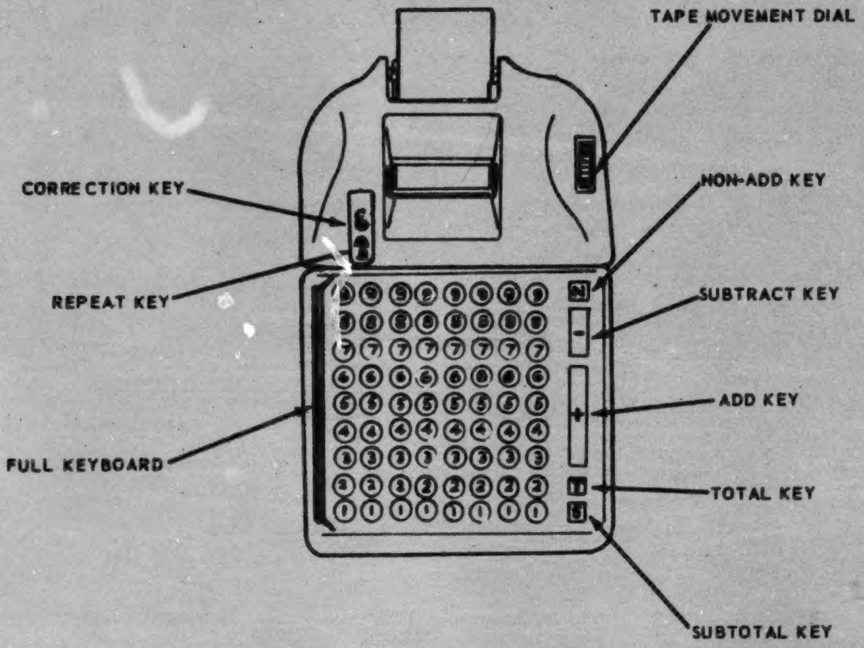
129.82

Figure 2-3.—Typical Electronic Calculator.

Care and Maintenance.—All calculators are precision instruments and must be protected from bumps and jars that will upset the delicate balance of their mechanism. As with other office machines, dust and dirt are big enemies. Keep your calculator clean and COVERED WHEN NOT IN USE. If the machine is not operating properly, unplug it immediately. Do not attempt to repair calculators yourself. All repairs and maintenance should be performed by qualified technicians or company representatives. Because of its solid-state, the electronic calculator requires little maintenance other than replacement of the projector tube.

ADDING MACHINES.—You will use the adding machine frequently. In some cases, it is mandatory that verified adding machine tapes be attached to documents submitted with the returns or retained by the food service officer. Most office machine manufacturers have standard models of adding machines on the market. Most standard machines are operated electrically by depressing a bar or key but some are operated manually with a lever or crank, and a few can be operated by both methods. There are two general types: the "Full Keyboard" machine and the "Ten Key" machine.

Full Keyboard Machine.—A full keyboard machine has 8 to 12 columns on the keyboard. These keys are used to enter the amounts to be added or subtracted. The amounts print on the tape when the appropriate operating keys on the right or left side of the keyboard are depressed. All standard adding machines have operating keys that will ADD, SUBTRACT, NON-ADD, SUBTOTAL, and TOTAL the amount entered on the keyboard and print the amounts on the tape. There is also a CORRECTION or ERROR KEY which is used to clear the keyboard entries, and some machines have a REPEAT key. The SUBTOTAL key does not clear the tape but the TOTAL key does. Figure 2-4 illustrates the layout of a typical full keyboard machine.



91.139(129)[1]

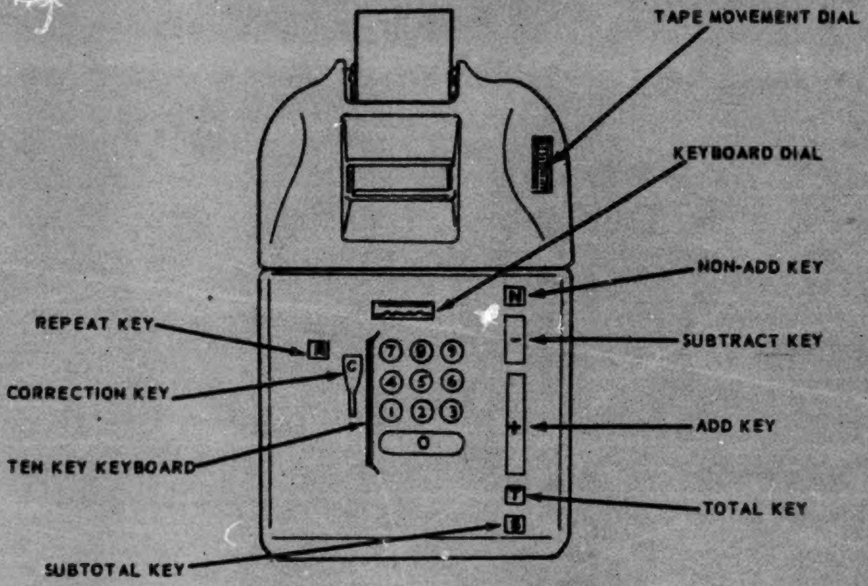
Figure 2-4.–Typical key arrangement of a full key board adding machine.

Ten Key Machine.–The ten key machine has the same standard operating keys as the full keyboard type but its keyboard contains only ten keys numbered 0 through 9 (Figure 2-5). Since you cannot "read" the number entered on the keyboard, a dial above the keyboard records each digit in the same order (reading from left to right) as you depress the keys.

The ten key machine can be operated at a much faster speed than the full keyboard type once you have learned how to position your fingers on the keyboard. The keyboard is always arranged in the ten key pattern shown in Figure 2-3. However, the positions of the operating keys vary. On the keyboard, the 4, 5, and 6 keys are used as the "home keys" for the index, middle, and ring fingers respectively. From the home keys, you can easily reach the 7 and 1 keys and the left operating keys with the index finger; the 8 and 2 keys with the middle finger; and the 9 and 3 keys with the little finger. With a little practice, you can soon operate the machine by touch. Of course, if you are left-handed, you will have to operate it "in reverse."

Care and Maintenance.–Although adding machines are more "rugged" than typewriters, dust and rough handling are still enemies. Keep the machine clean and keep it COVERED WHEN NOT IN USE. Inspect the electric cord frequently and have it replaced if worn or frayed. Consult the manufacturer's handbook on how to change the ribbon, insert a new tape, and oil the machine. Be sure you order the proper replacement ribbons and tapes for the make and model of machine you are operating. A manufacturer's plate on the frame or bottom of the machine will contain this information.

Safety Precautions.–Careless handling often can cause unnecessary damage to office machines and injury to personnel not to



91.139(129)^{2}

Figure 2-5.—Typical arrangement of a ten key adding machine.

mention an increased workload. Here are some general rules to keep in mind in regard to the use of office machines:

- Always place machines on sturdy desks and stands.

- If possible, the machines should be fastened down to prevent them from falling, especially at sea. Be sure you are familiar with the rules for securing at sea aboard your ship.

- When machines must be moved, always carry them by the frame. Do not move heavy equipment by yourself.

- If your typewriter is mounted in a desk-well, be sure the carriage is centered and locked before closing it into the well.

- Inspect electrical wiring often and ensure that all electrically operated machines are equipped with a 3-prong, properly grounded connection. Never use extension cords that have not been installed by qualified technicians and covered with suitable material if they extend across walking aisles.

- Never permit inexperienced persons to operate or experiment with calculators and other equipment. If you are teaching a person how to use a machine, supervise closely until the trainee knows how to operate it safely and efficiently.

- Never experiment with new equipment yourself. Always obtain information from experienced personnel, if available, and study manufacturers' instructions carefully before attempting to operate any machines.

STORAGE SPACE PERSONNEL

In addition to the records section there are other areas where a Storekeeper may be assigned. A Storekeeper may be assigned as custodian of the subsistence storerooms, the refrigerated areas, or both.

The custodian(s) in charge of these areas will be responsible for:

- The receipt, stowage and issue of food items and maintenance of records and logs. It is strongly recommended that stock tally cards (NavSup Form 209) be utilized to contribute to the accuracy of the quantity on hand by posting issues, receipts, high and low limits.

- The maintenance of the refrigeration temperature log is a must! Twice daily, or more often if required, the refrigeration temperature readings must be entered in this log. If temperatures exceed the safety level, the food service officer should be notified immediately via the chain of command. NOTE: Even though your ship is going through a shipyard overhaul and you are using shipyard facilities, you must still maintain a temperature log. The responsibility does not rest with the shipyard.

MESS MANAGEMENT SPECIALISTS

The job description and responsibilities assigned to the individual MS and apprentices are influenced by the command's organizational manning and the billets authorized. The size of the division is in turn determined by the size and mission of the command.

At large commands, job descriptions and individual positions tend to be specialized. The command is usually allowed a chief MS, a galley supervisor, a watch captain, a vegetable preparation room supervisor, and a bake shop supervisor.

When fewer persons are available, some of these titles/positions are combined. At smaller commands one MS may be responsible for the entire operation of the enlisted dining facility and the officers' dining facility. Usually on smaller ships the officers will subsist from the enlisted dining facility. You should keep these facts in mind while you are studying the job descriptions of MS personnel.

Senior Mess Management Specialist

The chief MS or the senior MS on board is the supervisory petty officer in charge of all the dining facilities on board. The senior MS is responsible for coordinating the activites and work schedules of the rotational pool for personnel assigned to the division. In accordance with FOOD SERVICE MANAGEMENT (NavSup P-486 Chap. 1), the senior MS is prohibited from having custody or control of any original records and from preparing public vouchers for food items, but may maintain any duplicate records for the purpose of cost control and efficient dining facility operation. The senior MS is mainly concerned with the operational status of the dining facilities and such other areas as the nature of the profession demands. The senior MS has the following responsibilities:

- In direct charge of the galley and associated spaces.

- Coordinates activities with the treasurer/caterer of the officers' dining facility.

- Ensures that all equipment, fittings, cooking utensils, and other galley gear, are kept at maximum efficiency.

- Reports to the supply officer/food service officer corrective action, repairs, or alterations as needed.

- Musters the food service personnel of the galley and associated spaces each morning and conducts an inspection of all personnel for cleanliness of person and clothing, and makes a report of the inspection findings and of the absentees to the food service officer.

- Supervises issues and preparation of food; instructs all personnel, so that food is prepared in the most economical, attractive, and appetizing manner possible within the allowed NAVY ration, using the ARMED FORCES RECIPE SERVICE or locally approved recipes.

- Ensures that every precaution is taken to prevent contamination of food, and carefully inspects all food before it is prepared or served.

- Ensures that food is prepared and/or cooked as near serving time as practicable. If there is any doubt as to the quality of the food, reports it to the food service officer, who in turn will have proper determination made by the medical officer as to the fitness of the food for human consumption.

- Submits to the food service officer each morning a report of all food items issued to the enlisted dining facility the previous day.

- Prepares and signs the weekly menu. (NavSup Form 1080).

- Prepares the Food Preparation worksheet (NavSup Form 1090).

- At the discretion of the senior MS, keeps such duplicate dining facility records concerning the receipt, inventory, and expenditure of food items as may be necessary to schedule usage data necessary to the proper performance of the assigned duties.

- When there is no Supply Corps officer aboard a ship or station, the senior MS is the ranking specialist in the food service division.

Galley Supervisor

At large commands the MS, working directly under the supervision of the senior MS, is the galley supervisor. The galley supervisor will have the following duties:

- Supervise the personnel working in the enlisted dining facility and the officer dining facility in coordination with the caterer of the officers dining facility.

- Be present prior to, during, and immediately after the serving of each meal.

- Directly responsible to the senior MS for the proper preparation, serving appearance, and efficient operation of the galley.

- Utilize and train MS personnel on watch.

- Inspect the galley for cleanliness prior to the watch being relieved.

Watch Captain

The watch captain is the MS in charge of the specific watch. While serving in this capacity the watch captain is responsible to the galley supervisor. The watch captain will have the following responsibilities:

- Ensure that personnel on watch are in clean working uniform, report to work on time, know their jobs; and relay information from the galley supervisor to all food service personnel on watch.

- Ensure that sanitary procedures are observed during food preparation and enforce all rules and regulations regarding food service.

- Keep unauthorized personnel out of the galley.

- Ensure that cost effective methods are used at all times.

- Ensure the use of Armed Forces Recipe Service of approved recipes as instructed on the food preparation worksheet.

- Administer on-the-job training as needed, emphasizing safety, sanitation, conservation, and attractive meal presentation.

- Instruct personnel as to proper serving techniques.

- Constantly strive to promote a friendly customer service atmosphere with the patrons of the dining facility.

Vegetable Preparation Room Supervisor

The vegetable preparation room supervisor is the MS or apprentice assigned to the vegetable preparation room by the watch captain. The person assigned is responsible for:

- Initially preparing vegetables and fruits to be used in the galley.

- Ensuring efficient operation, cleanliness and maintenance of the vegetable preparation room.

- Preparing salads, salad dressing, and some dessert items.

Senior Baker/Bake Shop Supervisor

The bake shop supervisor is responsible for:

- The efficient operation, material maintenance and sanitation of the bake shop.

- The preparation of bakery products produced in the bake shop.

- The training of personnel assigned to the bake shop.

As mentioned earlier in this chapter, at small commands one MS may be responsible for all functions in regard to food preparation and service including the bake shop.

Watches

MS personnel are usually divided into two watches, Port and Starboard. Each watch is for a 24-hour period. The watch is usually relieved at a time agreed upon by both sections, subject to the approval of the senior MS. Watches may be for longer periods of time depending upon the number of personnel assigned and the mission of your command.

The on watch status may not be a continuous work period even though YOU ARE ON DUTY FOR THE FULL WATCH PERIOD. After the meal has been served and the galley cleaned, there may be time for rest and relaxation before preparation for the next meal begins; however, the galley should never be left unattended. One watch member should remain in the galley at all times until it is secured for the day for the purpose of security and fire prevention.

You probably have noticed a set of INSTRUCTIONS and SAFETY PRECAUTIONS posted on the bulkhead of your galley. This is required aboard all ships and stations. In general, all of them cover the same basic matters, but they may vary somewhat in application according to the size and mission of the activity, the nature of equipment in use, the daily routine followed, or other considerations. You should study and learn the instructions for your galley and make it a habit to follow the ones that apply to your work. In fact, you will WANT to follow them, because you will see that they make sense. They are concerned with maintaining the galley as a clean, orderly workspace; keeping the equipment in excellent condition; conserving Navy supplies; preparing wholesome, acceptable, nutritious meals; and maintaining safety on the job, the security of the ship, and the health and welfare of all your shipmates.

SUPERVISION

As you advance to petty officer, your responsibility increases. Your responsibility in such tasks as food preparation, food service, and room maintenance now includes not only the work you perform but also that performed by the personnel you supervise. If these people do not perform their jobs well, it reflects on your ability as a supervisor. You, therefore, should develop your ability as a supervisor, noting your weak points and making a conscientious effort to improve them. The following discussion outlines points that should be considered when you are supervising a job.

The steps for supervising almost any job are the same—whether it is operating galley equipment, planning menus, caring for provisions, cooking, baking, cleaning, or setting tables. You must first have clear understanding of the jobs that you are responsible for supervising. Then you must make the best use of the personnel whom you supervise. The process of matching the individual to the job and obtaining satisfactory results normally consists of five steps: (1) assigning, (2) training, (3) guiding, (4) inspecting, and (5) evaluating. What you should do and what you should look for in each of these steps is discussed in the paragraphs that follow.

ASSIGNING

Several factors should be considered when you assign jobs to personnel under your supervision: the number of personnel available, the time required for the job, the time available, the type of job, and the knowledge and experience of the personnel.

The first three factors–personnel available, time required, and time available–must be used in determining how many people to assign to a job or how many jobs to assign to each individual. The type of job is also an important factor in planning work schedules. Routine jobs, such as cooking, daily or weekly cleaning, wardroom service, or assisting in the pantry or galley, are assigned on a more or less permanent basis and are worked into a daily schedule. Other jobs, which are not so routine, require more planning in order to make the best use of the available personnel and time. These could be such jobs as inventories, painting a storeroom or other space, or the extensive cleaning necessary after some major repair work has been performed in your spaces.

You must also consider the ability and experience of the personnel to be assigned and the amount of time you have for supervising the job. One experienced person may be able to do a particular job without supervision; whereas, the same job could require two less experienced people with supervision. This is not to say that personnel should be assigned only to jobs which they are able to perform well on their own; this would prevent them from increasing their abilities. There is a better alternative. A less experienced person can be teamed with a person of greater experience. Thus, the experienced one is able to develop the ability to train others; the less experienced one learns a new job, and it has not been necessary for you to devote all of your time to supervising one job.

Each person should be familiar with all the jobs assigned to the division, and job rotation is an excellent way to achieve this goal. As a person becomes proficient in one job, training should begin on a new job. When all or most of your people are experienced in all areas of responsibility, it is an easy matter to make reassignments to fill in for those on leave or for those who have been transferred, or to cover any emergency. Job rotation also provides a more equitable distribution of work, particularly when some jobs are less desirable than others.

Work schedules should be posted so that everyone can easily refer to them. Each person can then check the assignment and know exactly what jobs have been assigned to each one.

TRAINING

Some training will be required when a person is assigned to a job for the first time. This might be just pointing out where the cleaning gear is kept when a person is given a new cleaning station, or it might be the considerable training required when a person is first assigned to assist in the galley.

For the most part, this training will be "on the job," and it requires that you know your personnel and the scope of their abilities and experience. Then you will not waste time explaining a job that they already know how to do, nor will you expect results from those people who have little or no knowledge of a job.

Upon assignment to a new job, each person should be given specific instructions as to the performance of the job. The "WHY" should also be included. Knowing the reasons for doing a job a certain way gives the person more incentive for doing it correctly. Personnel are less likely to be careless when they know that such carelessness may lead to injury, illness, or damage to equipment.

In the case of rush jobs, such as the final preparation for serving when the captain is expecting guests, it may be necessary for you to add the final touches yourself. But don't do the job yourself simply because it is easier than training one of your people to do it. Once the person has mastered the skill, the time you have spent in training will pay off many times.

GUIDING

When a person is learning a new job, the time to catch and correct mistakes is when they are first made–not after the habit of making the mistake has been formed.

This makes it necessary for you to observe the person to be sure that the instructions are understood. Mistakes can result from someone doing exactly what he thought you said; and that could be completely the reverse of what you intended to say. For example, if you see a new MS who is setting the table for a formal occasion, putting the oyster forks to the left of the plate, you may recall that you stated that forks are placed on the left side of the plate and you forgot to mention that oyster forks are an exception to the rule and must be placed to the right of the plate.

Getting each person off to a good start will increase the person's confidence in himself and in you. As a result, it will make it easier for the person to accept instructions in the future and it will make learning the next job easier.

The way you observe also makes a difference. The person should not feel that you are just waiting for him to make a mistake so that you can "lay into him." In fact, this type of supervision makes many experienced people nervous, and their performance may not be as good as it could be. It is possible to see that everything is being done correctly without appearing to be watching every move.

It's important that personnel know how well they are doing on a new job–don't keep them guessing. Tell them when their work is satisfactory or better than satisfactory, and it is quite proper to make these comments in the presence of their coworkers. However, if you must correct or criticize someone, it should be done in private. All criticism should be for the purpose of correcting and improving performance, not for the purpose of embarrassing the person.

INSPECTING

When an MS reports that a job has been completed, you should inspect it to see that it is up to the standard in every way. This applies not only to someone learning a new job, but also to someone who is experienced. When the people that you supervise know that you consider a job important enough to inspect, they will probably consider it important enough to do it right. If the job is unsatisfactory, tell them exactly what they did wrong and allow them to correct the mistakes. Thus, they learn from experience and will be less likely to make the same mistake again.

EVALUATING

Reviewing each MS's progress is a necessary part of good management. it goes beyond training, guiding, and inspecting on a particular job because it takes into account the overall performance of each person. It can be used to good advantage after a MS has worked for some time at a new job. It enables the MS to clear up any misunderstanding or questions regarding the job, and it provides you an opportunity to criticize the work constructively. A review of overall performance is helpful when you are making future assignments. By reviewing a person's previous accomplishments, assignments can be made which will give the person experience in a new area, increase the person's experience in a weak area, or permit the person to work in a perferred area.

Also, a review of total performance provides a better basis for evaluation than one based on only one job; few people have equal ability in all areas.

DINING FACILITY INSPECTIONS

Dining facility spaces and records are periodically inspected to determine their physical or financial condition. These inspections include material inspection, inventory board, administrative inspection, and medical inspection. In private dining facilities the relief of treasurer and audit inventory is also performed in addition to the above inspections. You will usually be involved, to some degree, in all of them and should be familiar with the purpose of each type of inspection.

MATERIAL INSPECTION

Material inspections are routine throughout the Navy. These inspections are scheduled periodically to determine the condition of equipment and spaces. You will normally be assigned a specific area and will be responsible for ensuring that it is maintained in a clean manner and that all related equipment is in proper operating condition. Galley and pantry equipment is closely inspected to ensure that sanitation and safety practices are followed. Sanitation and safety must be practiced daily, however, not just for material inspections.

ADMINISTRATIVE INSPECTION

Each ship and station of the Navy receives an annual administrative inspection. In this inspection, the main concern of the inspecting officers is with the administrative procedures of the various departments. They review financial statements, check records to determine the adequacy of accounting procedures, and check files to determine that reports are prepared and submitted as required. A material inspection is also held at this time.

MEDICAL INSPECTION

The medical department conducts periodic inspections of food service personnel and the galley and pantry. These inspections are usually conducted daily for personnel and weekly for spaces, but may be conducted more often if the condition or environmental factors are such that more frequent inspections are necessary.

Personnel are inspected for personal cleanliness and to be certain they are free of communicable disease.

All food preparation equipment and spaces are checked for evidence of insect or rodent infestation and for conditions favorable to the growth of bacteria. Should such conditions exist, the medical department representative will recommend actions to be taken which will eliminate them and reduce the possibility of recurrence.

AUDIT AND INVENTORY BOARD

The audit board is required to conduct inventories and perform audits of the dining facility. The purpose of this inspection is to determine whether or not the operation of the dining facility is in accordance with existing regulations and whether or not the financial condition is satisfactory.

RELIEF OF TREASURER

When the treasurer is relieved, the dining facility is inspected by the relieving treasurer. Since the treasurer assumes responsibility for all spaces, equipment, supplies, and funds, a general inventory is held in conjunction with the inspection. Afloat, three copies of the inventory are required. The original is sent to the commanding officer for his official file, and a copy is sent to the treasurer. Ashore, four copies are required. The original copy is sent to the commanding officer, a copy to the treasurer and a copy to the dining facility for their files. The audit and inventory board also conducts an inventory and performs an audit at this time.

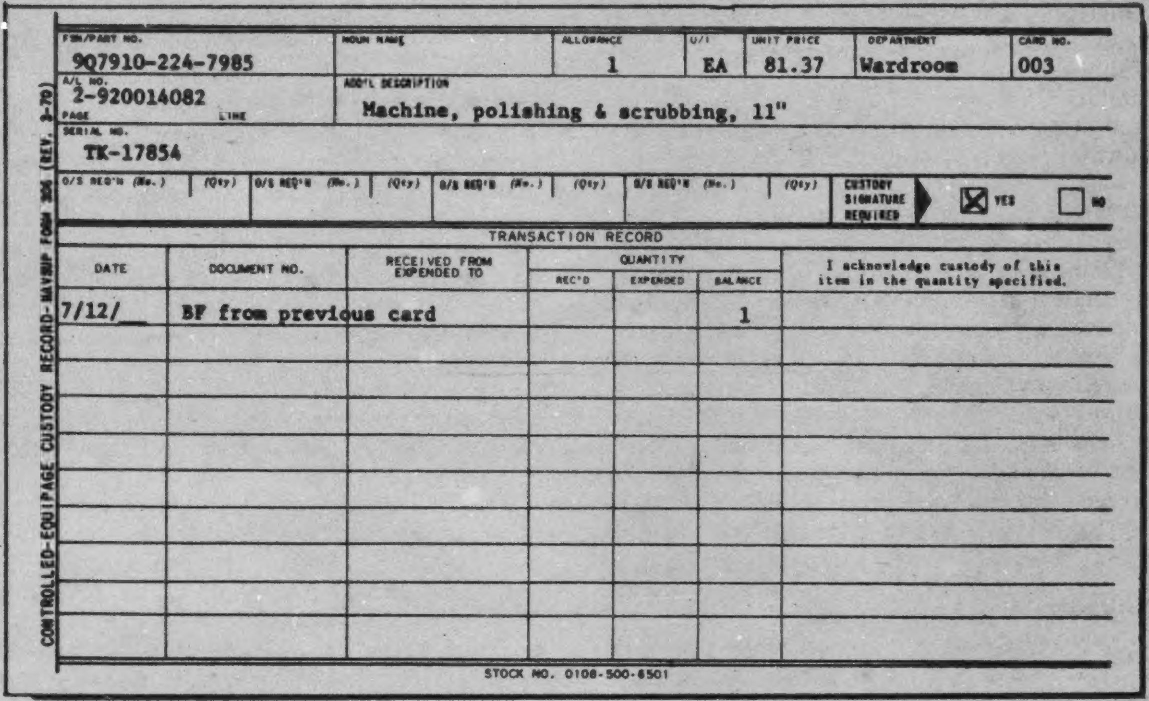
ALLOWANCES

The Coordinated Shipboard Allowance List (COSAL) is the basic allowance authority for ships. It reflects the allowance of installed equipment, specifies the repair parts to be stocked in support of that equipment, establishes the allowance of equipage, and serves as a guide for consumable supplies required in day-to-day operations. Of these, you will be primarily concerned with consumable supplies and, to a lesser degree, with equipage.

Consumable supplies include cleaning supplies, linens, protective clothing, and the items you use in food preparation and serving.

Equipage includes items of a more durable nature that are not consumed in use. Included within this category is a group of equipage items which require more stringent controls. These items of controlled equipage are selected because of their cost, vulnerability to pilferage, or because they are essential to the ship's mission. As a rule, floor polishing machines and typewriters are the only items of controlled equipage which you will regularly use in wardroom spaces.

Allowances ashore are based more on actual current need than on standardized allowance lists. Because operating conditions and the number of personnel aboard ships can be anticipated more realistically than for activities ashore, ship's needs can be more accurately



CONTROLLED-EQUIPAGE CUSTODY RECORD-NAVSUP FORM 306 (REV. 3-70)

FSN/PART NO. 907910-224-7985	NOUN NAME	ALLOWANCE 1	U/I EA	UNIT PRICE 81.37	DEPARTMENT Wardroom	CARD NO. 003
A/L NO. 2-920014082 PAGE LINE	ADD'L DESCRIPTION Machine, polishing & scrubbing, 11"					
SERIAL NO. TK-17854						

O/S REQ'N (No.) (Qty) O/S REQ'N (No.) (Qty) O/S REQ'N (No.) (Qty) O/S REQ'N (No.) (Qty)

CUSTODY SIGNATURE REQUIRED ☒ YES ☐ NO

TRANSACTION RECORD

DATE	DOCUMENT NO.	RECEIVED FROM EXPENDED TO	QUANTITY			I acknowledge custody of this item in the quantity specified.
			REC'D	EXPENDED	BALANCE	
7/12/__	BF from previous card				1	

STOCK NO. 0108-500-6501

7.3

Figure 2-6.–Controlled-Equipage Custody Record, NAVSUP Form 306.

reflected in the allowance lists. Also, because activities ashore have ready access to sources of supply, it is not so necessary for them to anticipate future needs as accurately.

Custodial responsibility varies with the category of material and its location. Custody records for controlled equipage are maintained on a Controlled-Equipage Custody Record (NavSup Form 306 or 460). An example of the NavSup Form 306 is shown in Figure 2-6. The NavSup Form 460 provides the same information as the NavSup Form 306 but in a different format. This card can be filed in a cardex or visible file. NavSup Forms 306 are normally used aboard ship since they are filed in binders which require less space. An original and one copy of the custody record are prepared. The original is signed by the custodian and is retained in the supply office. The custodian receives the copy for his records.

Other equipage (not controlled equipage) may be listed on memorandum records to facilitate taking inventory. This could include such items as electric toasters and vacuum cleaners.

As a rule, formal custody is not maintained for consumable supplies. However, they must be safeguarded against unauthorized use. Storeroom items should be issued in accordance with the procedures approved by the treasurer. You are expected to exercise reasonable care to prevent misuse of items in your spaces–such as bath towels used as shoeshine cloths, a table knife used as a screwdriver, napkins used as pot holders or dishcloths, and so forth.

A clean, locked space should be provided for storage of linens and protective clothing. The person having custody of these items should ensure that they are issued only for authorized purposes. A simple, workable control is to require that soiled items be returned in exchange for clean items issued.

INVENTORY

Inventory involves a physical count of every item within any given category for the purpose of ascertaining the actual quantity on hand. The inventory may be taken of those items in use or those in stock.

CONSUMABLE SUPPLIES

Inventories of consumables in use are taken to determine immediate requirements necessary to replace items used up, worn out, or lost, such as tableware, tablecloths, sheets, towels, ladles, and so forth. These inventories are usually conducted on a space-by-space basis with a separate checklist for each space.

Consumables in the storeroom are also inventoried. At this point, a distinction must be made between two categories of consumable supplies:

(1) Those drawn from supply storeroom and charged to the ship's operating funds.

(2) Those purchased commercially with wardroom funds.

This distinction is necessary since only those items which were purchased with wardroom funds are considered to be dining facility assets.

Inventories of consumable supplies purchased with wardroom funds are conducted monthly. Stock records which provide a running account of each item provide the basis for taking the inventory. All items are physically counted and the count compared with entries on the stock records. Each item is extended (quantity multiplied by unit price) to arrive at a money value. The inventory is taken and certified by the treasurer, who uses this information as part of the monthly financial statement of the dining facility. The audit board may also take, or spot check, the inventory in connection with its monthly inspection.

CONTROLLED EQUIPAGE

The NavSup Forms 306 and 460 were discussed earlier as custody records. These cards serve two purposes: as a custody record and as an inventory control document. The original is maintained in the supply office, and the duplicate copy is turned over to the department head having custody of the material. In the case of wardroom dining facilities, the department head (supply officer) may require the caterer or treasurer to sign the original custody record, in which case the caterer or treasurer retains the duplicate copy.

The department head's file of duplicate copies of the custody record provides the basis for conducting inventories of controlled equipage. In conducting the inventory, each item must be sighted and inspected for serviceability by the inventorying officer. Articles identified by serial numbers (such as typewriters) must be checked by these numbers. Items of controlled equipage, when no longer serviceable or when destroyed or missing, are expended from the equipage records by a Survey Request, Report and Expenditure, NavSup Form 154.

All controlled equipage in the wardroom and other spaces must be inventoried each year during the month of March. Inventories are also required at the following times:

(1) When the ship is commissioned, inactivated, or reactivated.
(2) Upon relief of the head of department, for those items in the department concerned.
(3) Upon change of command, at the discretion of the relieving commanding officer.

RECORDS AND REPORTS

Records and reports for officer afloat dining facilities are not as extensive as those ashore. The reasons are that afloat facilities usually are smaller, membership is more stable, bills are paid monthly and directly to the treasurer, and a large share of food items are purchased from the enlisted dining facility and require only one monthly payment. Dining facilities ashore have many individual transactions with members, guests, and civilian concerns which must be recorded.

Records and reports for which you may have responsibility afloat are primarily those that deal with the galley and food items, such as those concerned with food costs and menus. Stock control records are relatively simple and easy to keep because storage space is usually limited and smaller quantities of fewer items are stocked. *Manual for Messes Afloat,* NavPers 15158, explains in detail the accounting procedures required for private dining facilities afloat.

The more complex accounting system and required records and reports for the ashore activities are explained in the *Manual for Messes Ashore,* NavPers 15951, *Accounting Handbook for Nonappropriated Funds,* NavSo P-2409; and the *Accounting Handbook for Navy Dining Facilities,* NavSo P-3518, for dining facilities participating in the BUPERS Central Accounting System. In addition, records and reports of a local nature such as daily inspection reports of spaces, room equipment check-off lists, weekly linen inventory, and others may be required by individual dining facilities.

Stock records for food items are not maintained just to provide a job for someone. There are valid reasons for them.

To provide a running inventory of food items in the storeroom.
To provide a convenient source of usage information.

The stock record normally used ashore is the Property and Stock Record, NavCompt Form 742 (Figure 2-7). It is simple to use, and it provides needed information for menu planning and for ordering stock. Remember, the purpose of the storeroom is to provide the food items required by the cooks to prepare meals in accordance with the menu.

Let's look at the way this information is used. The menu planner prepares a menu for the following week. A calculation of the quantity of food items necessary to prepare the menu items is made. The items required are then compared with the stock records to determine which items are in stock and which items must be ordered. Thus, a shopping list is prepared for the person responsible for ordering stock.

It would be possible to keep the storerooms full at all times–this would ensure adequate stock. However, keeping the storerooms full also results in spoilage and waste because of an overage of stock, and in a loss of items due to overcrowding. A full storeroom is not necessarily an efficient storeroom. Thus, stock levels must be limited by anticipated use and individual storage life.

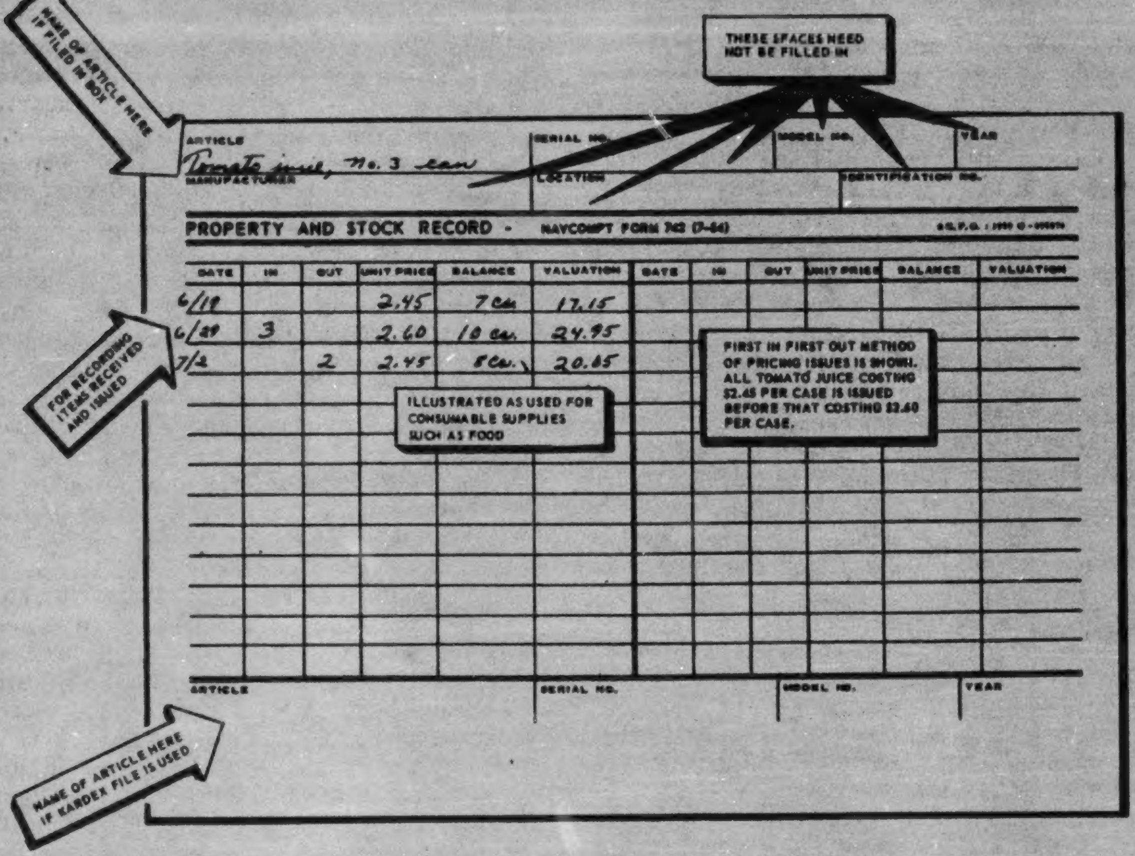
You could take the converted menu to the storeroom and physically check each requirement, but this would involve considerable time. It is far more efficient to have the status of your stock, readily available and usable, recorded on Property and Stock Records, NavCompt Form 742.

Issue records are maintained for the purpose of controlling food costs. One of the primary responsibilities of a CLOSED dining facility is to provide essential food service at a reasonable cost. In order to do this, the costs of items used to prepare meals must be known and controlled. The specific method used is a matter of local preference. However, it usually involves costing the menu by totaling the costs of ingredients (by meal, by day, or by week) as the menu is being prepared, and by a cumulative total value of all items issued to the galley for a specific period. When you are costing a menu, only the cost of major ingredients is considered. This is a "rough" figure, but it is adequate for planning purposes. The record of items issued provides the actual cost of meals.

CHIEF PETTY OFFICERS' DINING FACILITIES AFLOAT

Chief petty officers' dining facilities afloat are established by the authority of U.S. Navy Regulations for the purpose of promoting and maintaining the well-being, and morale, and efficiency of chief petty officers by providing dining, lodging, social, and recreational facilities aboard ship.

Master chief petty officers, senior chief petty officers, chief petty officers of the Navy and other Armed Forces enlisted personnel of comparable pay grades normally dine in a



NAME OF ARTICLE HERE IF FILED IN BOX

THESE SPACES NEED NOT BE FILLED IN

ARTICLE Tomato juice, No. 3 can

SERIAL NO.

MODEL NO.

YEAR

MANUFACTURER

LOCATION

IDENTIFICATION NO.

PROPERTY AND STOCK RECORD - NAVCOMPT FORM 742 (7-64)

DATE	IN	OUT	UNIT PRICE	BALANCE	VALUATION	DATE	IN	OUT	UNIT PRICE	BALANCE	VALUATION
6/19			2.45	7 cs.	17.15						
6/29	3		2.60	10 cs.	24.95						
7/2		2	2.45	8 cs.	20.05						

ARTICLE

SERIAL NO.

MODEL NO.

YEAR

FOR RECORDING ITEMS RECEIVED AND ISSUED

ILLUSTRATED AS USED FOR CONSUMABLE SUPPLIES SUCH AS FOOD

FIRST IN FIRST OUT METHOD OF PRICING ISSUES IS SHOWN. ALL TOMATO JUICE COSTING $2.45 PER CASE IS ISSUED BEFORE THAT COSTING $2.60 PER CASE.

NAME OF ARTICLE HERE IF KARDEX FILE IS USED

125.22

Figure 2-7.—Property and Stock Record, NAVCOMPT 742.

separate dining facility when space and personnel allowance are available. One cook is assigned for each 75 members, or fraction thereof, and one food service person is assigned for each 15 members or fraction thereof. Regulations do not stipulate the length of time these people will serve in the CPO dining facility, but usually the period is for no less than three months.

In so far as practicable, this regulation and the regulations for operating the CPO dining facility are compiled in accordance with the *Manual for Messes Afloat*, NavPers 15158, Chapter 4. However, adaptations must be made to fit the circumstances; destroyer-type ships and smaller ships do not have organized dining facilities. In such cases, chief petty officers are subsisted in the enlisted dining facility in a space designated exclusively for them and the enlisted dining facility operates in the same manner as an organized dining facility afloat.

BOARD OF OFFICERS FOR CHIEF PETTY OFFICER DINING FACILITY

Regulations provide for only two administrative positions in a chief petty officers' dining facility afloat—the president and the treasurer. However, there is frequently a third position which is that of the caterer.

President

For the purpose of military authority, the senior chief petty officer is the president. The president presides and is charged with preserving order. When the president is absent, the chief next senior acts as president.

The *Bureau of Naval Personnel Manual* sets down the rules for determining military seniority as follows: (1) Persons in higher pay grades take precedence over those in lower pay grades regardless of ratings held. (2) If two persons are in the same pay grade, the one with the greater amount of time in rate takes precedence. (3) If two men are in the same pay grade and have the same amount of time in rate, the one with the greater amount of time in the next lower pay grade takes precedence, and so on.

Treasurer

Regulations provide for the appointment of a treasurer; however, when a dining facility does not include a caterer, the treasurer takes complete charge of the operation of the dining facility, including those duties normally assigned to the caterer, and is responsible for the funds. Larger activities find that the dining facility is run more efficiently if there is both a treasurer and a caterer.

The treasurer keeps an account of all receipts and expenditures from which an abstract of the financial condition of the facility may be ascertained at any time. At the end of each month the treasurer renders the statement of the accounts of the dining facility. This statement shows in detail all the sums owed to or by the dining facility. It also shows the treasurer's receipts and expenditures and contracts entered into for future delivery of supplies. The books must be produced whenever called for by the commanding officer or the executive officer. No chief petty officers having supply, subsistence, or disbursing duties shall be eligible to serve as treasurer. The commanding officer will determine the length of time a chief petty officer will serve as treasurer/caterer.

Caterer

The caterer is responsible for the operation of the dining facility. The caterer supervises the procurement, storage, and issue of all provisions and supplies. The caterer secures funds for provisions and other expenses from the treasurer and is accountable to the treasurer for the expenditure of these funds. The caterer approves all menus and supervises the preparation and service of the food. The caterer has the direct supervision of the cooks and food service personnel who are assigned to the dining facility. The caterer has charge of all Government property used by the CPOs and supervises the cleaning of equipment and spaces assigned to the facility. In some ships this includes the berthing spaces, but in others, different arrangements are made for cleaning those spaces.

Audit Board

The audit board consists of three or more members. Normally, two members are commissioned officers and one is a member of the dining facility, none of which have managerial functions in the dining facility. The commanding officer appoints the members to the audit board. The administration and operation of the chief petty officers dining facilities afloat shall be in accordance with the applicable procedures indicated earlier for officers dining facilities afloat, except that bills and shares are not permitted. Funds for the operation of the dining facility are generated by commuting the rations of each member and the rations of the enlisted personnel assigned therein to the dining facility.

For detailed discussion of the administration and operation of the officers' and chief petty officers' facilities afloat and ashore, dining facilities closed and open, duties and responsibilities of appointed officials, refer to: *Manual for Messes Afloat,* NavPers 15158; *Manual for Messes Ashore,* NavPers 15951; *Accounting Handbook for Nonappropriated Funds,* NavSo P-2409. Those dining facilities participating in the BuPers Centralized Accounting System should refer to the *Accounting Handbook for Navy Dining Facilities,* NavSo P-3518.

CHAPTER 3

SANITATION/HEALTH CARE

Outbreaks of food-borne illnesses continue to be one of the problems encountered in mass feeding operations. Most outbreaks are preventable, since the most common cause is the failure of food service personnel to practice good personal hygiene and to utilize sanitary techniques.

In addition to the hazards of accidental contamination with which MS personnel have always contended, modern warfare has added other hazards. Nuclear, biological, and chemical agents may be used in any future war. Protection of the food supply and decontamination measures in the galley and dining areas would be vital to the defense of the ship or station.

BACTERIA

An understanding of bacteria is valuable to all personnel and essential to those who work with food in any way. Bacteria are one-celled microorganisms; so small they are visible only under a microscope. They are widely distributed in the air, water, soil, and in animal and plant tissues. Bacteria are classified according to their shape. Those round in shape are called COCCI; the rod-shaped ones are called BACILLI; and the spiral shaped ones are called SPIRILLA.

Since bacteria cannot be seen, our best defense against the harmful bacteria is strict adherence to sanitation principles. Bacteria can move of their own accord only in liquids and cannot leave a fluid surface unless transported as "passengers" by other agents such as dust, food, dishes, silverware, cooking utensils, dirty fingers or fingernails, a common drinking cup, a hand towel, water, insects, or rodents.

Bacteria reproduce themselves simply by dividing in half. On the average each bacterium, under favorable conditions, will divide and become two bacteria every 20 minutes. The rate of multiplication or growth of bacteria is affected by heat and cold. Certain types of bacteria, if allowed to grow and multiply, produce toxins which cause food poisoning. Boiling will kill all bacteria but it will not kill the toxins once they are allowed to form. Certain strains of the staphylococcus bacteria will withstand boiling temperatures for long periods of time before they are killed and are virtually impossible to kill by normal cooking methods. Once the toxin has been allowed to form, no amount of cooking will make the food safe. Refrigeration will prevent the bacteria from producing toxin but will not kill the toxin once it is formed.

FOOD-BORNE ILLNESSES

Food-borne illnesses can be classified into three basic types: natural and chemical food poisoning, food intoxication, food infection.

NATURAL AND CHEMICAL FOOD POISONING

Natural Food Poisoning

In this type of food-borne illness, the food in its natural state contains elements poison to humans. In your tours of duty as a Mess Management Specialist in the Navy, you will learn of many new foods that are not common to the United States. Some plants and animals cause severe illness and even death when consumed.

Every effort is made to keep poisonous plants and animals off the ship. But sometimes they do get aboard. Toadstools, hemlock, mussels (such as those found on the west coast during the summer), tropical fish (such as toadfish, puffing fish and certain members of the jack fish family), and in tropical waters, at certain seasons of the year, barracuda can cause poisoning and death. Some types of mushrooms contain natural poisons. Only an expert can decide whether or not a certain mushroom is fit to eat. The safest rule is-never use unfamiliar foods unless your medical officer approves their use.

Chemical Food Poisoning

Some food-borne illnesses are caused by chemical poisons. In the case of chemical food poisoning the poison is introduced into the food accidently.

ANTIMONY POISONING is caused by eating food cooked in poorly coated or chipped enameled cooking utensils.

CADMIUM POISONING may take place if chilled acid foods or drinks are allowed to stand in cadmium-plated metal containers before they are served. Illness may strike 10 to 15 minutes after the food is eaten. Lemonade, fruit punch, tomatoes, raspberry gelatin dessert, and tea which contains lemon juice can be contaminated by cadmium. Ice trays and metal pitchers plated with cadmium have caused chemical poisoning when filled with cold acid foods.

CYANIDE POISONING may result if silverware is not properly washed and sanitized after detarnishing.

ZINC POISONING in food is rare. It may occur when acid foods are cooked in galvanized iron kettles. Outbreaks have occurred when apples have been cooked in this type of kettle.

LEAD AND ARSENIC sometimes used to spray fresh vegetables may cause these foods to become poisonous. Be sure all fresh fruits and vegetables are thoroughly washed before you cook them, or before they are eaten raw. Lead poisoning may also result from the ingestion of food or water which has been in contact with lead pipes, lead-plated equipment, and lead-soldered pots and pans. Lead is a cumulative poison; the accumulation of small doses in the body will eventually cause chronic lead poisoning.

FLUORIDE POISONING is caused by sodium fluoride–a substance often used to get rid of waterbugs or cockroaches. It is a white powder that can easily be mistaken for powdered milk. Keep all containers for such poisons out of the galley and bakeshop.

METHYL CHLORIDE POISONING is caused by leaking mechanical refrigerators. Check your equipment for such leaks and request scheduled PMS from the engineering division to detect faulty equipment.

FOOD INTOXICATION

This type of illness is caused by toxins. Under favorable conditions certain bacteria produce chemical compounds called "toxins" which if ingested, cause food intoxication. Staphylococcus is the most commonly reported food intoxication.

Staphylococcus

The staphylococcus germ is found in the throat, on the skin in pimples and boils, and in great abundance in the postnasal drip of people recovering from colds. Consequently, the most prevalent carrier of food intoxication is food service personnel. People with any of these symptoms must not be allowed to work in food preparation spaces in any capacity.

Foods most associated with outbreaks of Staphylococcus are pork products and fowl. Ham is susceptible to staphylococcus poisoning and must not be sliced too far in advance of serving unless properly refrigerated.

Other foods commonly involved are potted meats, fish, cheese, milk products, (including cream and custard filled pastries), potato and macaroni salad. Foods can contain sufficient toxin to cause food poisoning and yet have no odor of spoilage and no abnormal taste. Even when food has been properly refrigerated, it can become contaminated by bacteria while it is being prepared or while it is standing in the galley before it is served.

Botulism

Botulism is a second type of food intoxication. This disease, usually fatal, is caused by the toxin produced by the rod-shaped bacterium called clostridium botulism. Botulinus organisms are found in the soil and gain access to foods through contact with soil and dust and possibly water. The foods most often responsible are either canned or fermented foods in which the preserving process has not been properly performed and has not succeeded in destroying the bacteria in the food. The botulinum grows and multiplies in an airtight container. However, when cans are damaged, leak, bulge, or are sprung, the contents are presumed to be unsafe. Medical personnel should be consulted to determine whether these products are safe or unsafe.

The botulinum organism sometimes produces a gas and a cheesy odor in food, but the absence of these signs does not necessarily mean that the bacteria are not present.

FOOD INFECTION

This type of food illness is caused by microorganisms, such as, salmonella shigella clostridium species, streptococci bacteria, bacillus bacteria and typhoid fever bacteria. A large percent of the food infections are transmitted by foods which have been allowed to remain at room temperature for a prolonged period of time. The great majority of the outbreaks of food infection are caused by meat and meat mixtures (poultry, particularly turkey). For this reason poultry dressings should not be served as leftovers. Other foods which may be involved are: custards, milk, cream, ice cream, seafoods, meats, eggs, meat products, shellfish, salads, mayonnaise, salad dressing, poultry dressing, bread puddings, cream pies, eclairs, and filled pastry.

The microorganisms are transmitted to the food by personnel who are sick or carriers and who are allowed to handle food in the food preparation area.

Salmonellosis

Salmonella bacteria is transmitted by foods; usually from undercooked, semi-cooked, raw foods, or from foods infected after cooking by persons who are harboring the bacteria and giving them off in intestinal discharge.

Since salmonella bacilli leave the body through the intestinal tract, the main source of salmonella infection is the person who does not wash his hands after leaving the head; consequently he contaminates all the food he handles.

Mice, rats, and cockroaches may contaminate food by dragging filth over food and food utensils, or by intestinal deposits which are brushed off into food or containers.

While no specific foods may be said to be responsible for salmonellosis, the ones most likely to harbor the salmonella bacilli are: (1) those that are usually eaten raw, such as salads and greens; (2) cooked leftover foods that are not reheated thoroughly; (3) foods that are undercooked, especially poultry and uninspected meats; and (4) infected eggs that are eaten raw or undercooked.

Streptococcus

Infections such as septic sore throat and scarlet fever are transmitted by contaminated milk and by certain other foods, including meat, meat products, and dressings. One type of this infection also causes a gastrointestinal disturbance. Floor dust is one of the modes of transmission.

Typhoid Fever

Typhoid fever is transmitted by milk, shellfish, or water supplies that have become polluted with the urine or feces of a person harboring the organism of this disease. It is also spread by carriers and by flies which transport the typhoid bacteria from soiled articles to foods, dishes, and cooking utensils.

Bacillus Dysentery

Bacillus dysentery is transmitted by contaminated foods or water, by carriers, or by flies. The bacilli of this disease are found in the bowel discharges of infected persons.

Animal Parasites

Animal parasites sometimes enter the body in food and produce infections. Some of these forms of animal life are one-celled; all are so tiny that they are not visible when the food is being prepared.

AMOEBIC DYSENTRY.–This illness is caused by a one-celled animal, the amoeba. These organisms eat the red blood corpuscles of the body and also the cells which line the intestines. The dysentry-producing amoebae are transmitted by foods served cold and moist, such as celery, lettuce, and other fresh vegetables, or fresh berries. These foods may be infected by human carriers, by flies, or by having been grown in fields where animal excreta was used as fertilizer.

TRICHINOSIS.–Eating infected pork that has not been thoroughly cooked is the most common cause of trichinosis. All fresh pork products must be cooked to an internal temperature of 170° F to kill the trichinella worm. Since there is no way of knowing whether or not this parasite is present, the pork must ALWAYS be thoroughly cooked.

PORK TAPEWORM INFECTION.–The pork tapeworm is transmitted by eating infected pork that has not been cooked long enough to kill the cysts of the worm, and also by accidentally ingesting pork tapeworm eggs. If ingested, the tapeworm causes pork tapeworm infection.

BEEF TAPEWORM INFECTION.–Beef tapeworms are transmitted by infected beef that has not been cooked long enough to kill the encysted larvae. In order to prevent ingesting the beef tapeworm, only government inspected beef should be used. If it is necessary to use beef that has NOT been inspected, freeze it at 14° F or below for 5 days or longer, or pickle it in 20-25 percent salt solution for 5 days or longer. Cook it well done; never serve it rare.

FISH TAPEWORM INFECTION.–Fish tapeworm is transmitted by infected fish that has not been thoroughly cooked.

For purposes of safety, always ensure that fish is thoroughly cooked, and that it is never tasted in the raw state.

MOLDS AND YEAST

Other types of cell life which may or may not be harmful are molds and yeasts.

Molds

Molds are composed of many cells and may be very small or large enough to cover an entire wall. They grow best in dark, damp places, where temperatures are favorable. Some molds are valuable in the production of medicines such as penicillin; other molds may cause certain infections in human beings.

Molds spoil the taste of food and eventually destroy it. Mold may be removed from certain foods and the remainder of the food used. Consult your medical department on the precautions to be taken.

Yeasts

Like bacteria, yeasts are single-celled. They reproduce by budding. When a bud becomes sufficiently large, it separates from the original cell and becomes an independent cell. Certain yeasts are used in bread making, vinegar fermentation, and the manufacture of beverages.

PRESERVATION

Although bacteria have been discussed as the cause of food-borne illnesses, they also cause food spoilage either by actually eating the foods and leaving their waste products in them, or by producing toxins inside the foods.

Foods are protected from bacteria spoilage by several methods employing heat–pasteurization, cooking, dehydration, and smoking. They are also protected, within limitations, by refrigeration.

Effects of Heat

A definite relationship exists between the temperature and type of food material and the length of time required to kill bacteria. The ideal temperature for the growth of bacteria is between 40° F and 140° F. Any temperature below 40° F retards the growth of bacteria. Temperatures above 140° F, if maintained for a sufficient time, kill most bacteria. Whether or not the harmful bacteria can be destroyed by heat depends upon the type of bacteria and the type of food material involved. Heat penetration varies widely with the different types of substances in which bacteria may grow. For example, a longer period of time or higher temperature is required to kill bacteria in a can of soup than in a can of water. The exact number of minutes, hours, or days an organism will live is impossible to determine unless the temperature it can tolerate and the material on which the bacteria feed are known. This relationship, called thermal death time, is defined as the period of time required to kill a bacterial species in a certain material at a previously determined temperature.

Pasteurization

Destruction of all harmful bacteria in certain foods, notably milk and milk products, is accomplished without actually cooking the foods. There are three methods of pasteurization:

1. Holding method, in which milk is held at a temperature of 145° F for not less than 30 minutes.
2. Short-time temperature (flash) method, in which the milk is held at 161° F for not less than 15 seconds.
3. U.H.T.A.S.P. (161° F for 30 seconds)

Ultra
High
Temperature
Aseptic
Sterility
Processed

Since acid, or sour-tasting foods, are generally capable of destroying bacteria at a lower temperature, such foods as fruit juices, pickles, and sauerkraut frequently are pasteurized rather than subjected to high temperatures.

Cooking

Cooking is effective in destroying most food-spoiling bacteria. Cooking cannot, however be considered a sterilization process because some heat-loving bacteria are not destroyed by it. These heat-resistant bacteria fortunately do not affect canned food since conditions are unfavorable to their development.

Dehydrating

Dry heat is sometimes used to dehydrate fruits and vegetables in order to preserve them. In this case, however, the heat does not destroy the bacteria but simply removes one of the conditions essential for their growth—MOISTURE. Should any dried food come in accidental contact with water during storage, the food will quickly deteriorate due to bacterial activity. You should be careful to store all dehydrated foods in clean, dry, covered containers.

Smoking

Meats and fish are sometimes preserved by being smoked for definite periods of time. The preserving action is due to drying rather than to the chemical preservatives, such as creosote and pyroligenous acid, which are found in smoke.

Refrigeration

Although refrigeration helps keep perishable foods from spoiling, food cannot be kept indefinitely in the refrigerator without showing some signs of bacterial activity. Chapter 4 of this text lists the correct temperature and safe storage life for perishable subsistence items. Care must be taken to arrange food in the chill or freeze spaces in such a way as to allow the free circulation of air. Overcrowding and stacking foods retards the refrigeration process. Any container of food placed in the refrigerator must be covered to prevent contamination from food placed on shelves above or from condensation. As you know, sanitation is very important in food service. Be sure to keep all refrigerated spaces clean and odor free at all times.

PERSONAL HYGIENE

In the preceding section you learned that bacteria are everywhere; they multiply rapidly, and thrive on food and moisture. While some types of bacteria are helpful, there are others that are harmful and can be passed directly or indirectly from one person to another. We will now discuss how these disease-bearing bacteria are transmitted, and how you, by practicing good personal hygiene, can prevent their transmission.

Bacteria are discharged from the respiratory tract which includes the nose, mouth, and throat–your breathing and speaking apparatus. Measles, mumps, influenza, and the common cold are examples of infections that produce bacteria-loaded discharges from the nose and throat. These discharges are usually the first symptom of illness. When you cough or sneeze, bacteria are sprayed from the mouth in large numbers and for quite a distance. The hand that comes in contact with the handkerchief used to block the cough or sneeze becomes a source of infection for anything it touches. The rule to follow is–block the cough or sneeze, then WASH YOUR HANDS.

Certain disease-bearing bacteria are discharged from the intestinal track. An example is the bacteria that causes dysentery. To prevent transmitting the bacteria you should wash your hands thoroughly after using the head.

Some people may be carrying disease bacteria in the body and spreading them to other people. The person who is "catching cold" for example is carrying the germ of the common cold. During the incubation period, which may be from 12 to 48 hours, this person is likely to be giving off the germs of the common cold to others.

Your hands provide one of the most common means of transmitting germs. Hands that look clean to the eye may, under examination for bacteria, be found to be heavily contaminated. Hands contaminate objects used in food service and these objects may be the means by which diseases are transmitted to others. This is indirect contact.

Many unconscious habits are highly unsanitary. Examples of such habits are; putting the fingers in the mouth, scratching the head, rubbing the ear, or drying or wiping your hands on your apron. It is important to become aware of these habits and to control them as much as possible. In any case, remember always to wash your hands before touching food or utensils.

Another unsanitary practice is sticking fingers into food to taste it. The proper way to taste food is to use two spoons, usually the soup spoon size. Use one to dip out a tasting sample; transfer it to the second spoon for tasting. Always use two spoons.

A daily bath and wearing clean work cloths, including head covering, are important habits of personal hygiene.

FOOD PREPARATION

Study of the previous pages should make it increasingly evident that the food service worker is the most important link in the transmission of disease through foods. His health, personal habits, and methods of preparing and serving food are of concern not only to himself but to his shipmates as well.

Most food-borne disease outbreaks are due to four factors (1) preparation of food too far in advance, (2) poor refrigeration of food, (3) careless handling of food, (4) failure of personnel to follow proper personal hygiene habits.

The following precautions should be observed in preparing and serving food:

1. Food should be served promptly after it is prepared. Otherwise, it should be refrigerated or kept hot. This is the general rule. How this rule applies to specific foods is explained in items 2 through 7.

2. Protein foods which are not served immediately after they are cooked should either be chilled to temperatures of 40° F or lower (but not frozen) or held at 140° F or higher.

Protein foods include meats, fish, poultry, gravies, meat stocks, soups, eggs, custards, cream fillings, and milk. Growth of harmful bacteria and the development of toxins (poisons) formed by the bacteria occur rapidly in cooked protein foods during holding at temperatures between 40° F and 140°F. Cooked protein foods that have been held at temperatures between 40° F and 140° F for more than 3 hours will be considered unfit for consumption and must be destroyed.

This principle is known as the 3-HOUR RULE. If the product is refrigerated at intervals and then permitted to warm up, the total time of the various periods between 40° F and 140° F must not be more than 3 hours. Protein foods composed of ingredients which are hand-peeled, hand-sliced, or hand-diced after they are cooked should never be used as leftovers; the 3-hour limit between temperatures of 40° F and 140° F is usually taken in preparing, chilling, and serving the food. These foods include potato salad, chicken salad, macaroni salad, shrimp salad, egg salad, and similar items. Hand preparation not only increases the chance of contamination, but generally increases the length of time that these foods are held at room temperatures. It is also dangerous to return opened jars or bowls of mayonnaise and cooked salad dressing from the salad bar to the refrigerator for reuse at a later meal because of the danger of miscalculation as to the total time that has elapsed from the time that these salad dressings have been held at temperatures between 40° F and 140° F.

3. When leftovers or warm foods are chilled, care must be taken to assure prompt and thorough chilling (40° F or below) to the center of the food mass. Foods that are to be refrigerated should be placed in shallow pans to a depth of not more than 3 inches and must be covered with lids or waxed paper. Do not put leftovers in large, deep pans as chilling may take so long to get to the center of the food mass that sufficient time is allowed for the growth of harmful bacteria and development of toxins. Guard against any procedure that might delay cooling. Place foods to be chilled in the chill box immediately. Leftover food must not be saved for more than 36 hours. Freezing leftovers is prohibited. To prevent miscalculations in the length of time leftovers have been stored, all leftovers should be tagged with the meal originally served, (breakfast, lunch, or dinner) and the date, and time it was returned to chill box.

4. Any food that has been ground or chopped and is to be cooked later or incorporated in a prepared dish must be refrigerated immediately. Such ground or chopped food should be refrigerated until cooked. When food is ground, an increase in the area of contamination and growth of harmful bacteria results. When chilled foods are ground, the grinding process warms the food to the point where bacterial growth may start.

5. Place meats that are cut, sliced, or diced in shallow containers, cover with lids or with waxed paper, and refrigerate immediately. The temperature of the meat cutting room should be maintained at 50° F. Improper handling of meats can result in spoilage as well as in the transmission of disease.

6. Frozen foods should be thawed in the refrigerator. Freezing breaks down tissue and because of it foods can be invaded by germs more rapidly. Foods once frozen then thawed must not be refrozen. If not eaten, store under 40° F.

7. Keep milk and milk products under refrigeration at all times. This means keeping them chilled on the serving line.

8. If you are using individual serving containers do not put ice on top of containers.

9. All fresh pork products must be cooked to an internal temperature of 170° F. Never serve raw pork products.

10. Fresh fruits and vegetables should be washed thoroughly under running water to remove any particles of dirt or to remove poisonous insect sprays. Green vegetables of uncertain origin should be suspected of being contaminated with pathogenic organisms and should be chemically sanitized by immersion for at least 15 minutes in a 100 ppm (parts per million) available chlorine solution; or 30 minutes in a 50 ppm available chlorine solution (or other approved method) and thoroughly rinsed with potable water before they are cooked or served. Head items such as lettuce, cabbage, celery, etc., must be broken apart before they are sanitized.

11. Keep foods covered at all times except during actual preparation and serving.
12. Palletize all subsistence items in storage spaces to facilitate cleaning and air circulation.
13. Keep all work tables and benches clean at all times.
14. Store food off the deck.
15. Keep food-preparation utensils, meat grinders, and other similar equipment clean and handle them properly. Food that comes in contact with equipment that is contaminated becomes contaminated.
16. Wash your hands before preparing food.
17. Don't cough, sneeze, or talk over food while it is being prepared or served.
18. Never smoke while you are preparing food. Saliva can be dropped on foods very easily when you are smoking.
19. Keep fingers away from the mouth, lips, and face.
20. Handle foods as little as possible.
21. Use tongs to handle butter, doughnuts, bread, and other similar items of food. Do not use your hands.

KEEPING UTENSILS AND EQUIPMENT CLEAN

All phases of sanitation in a dining facility are important. However, one of the most important is the proper cleaning and sanitizing of equipment used for preparing, handling, cooking, and serving food and the proper cleaning and sanitizing of trays, dishes, and other dinnerware.

Dishes may be washed by hand or by machine. Whatever the method, the final results may either be excellent or poor, depending upon your knowledge and skill, and upon how conscientious you are in utilizing your knowledge and skill in the use of the equipment and materials provided.

The best equipment and detergents will not do a good job of dishwashing if used improperly.

TYPES OF SOIL

Unless the galley equipment and utensils are thoroughly cleansed, food particles in which bacteria may grow will remain on them. These food soils are divided into several distinct types:

- Freshly deposited soil–the soil that remains immediately after the equipment or utensil has been used.

- Thin film–the soil that remains as the result of ineffective cleaning, following a flushing with water. Thin films are not easily seen and they are capable of sustaining germs.

- Built-up deposits–the result of repeated ineffective cleaning methods causing a day by day accumulation of soil.

- Dried deposits–accumulations that result from drying action and formation of heavy crusty deposit.

- Baked deposits–deposits that have been baked onto equipment and have become difficult to remove.

- Burned deposits–materials burned into equipment surfaces by high heat. These are the most difficult to remove.

REMOVING STUBBORN SOILS

The Navy procures the correct type of detergent to be used in washing food preparation utensils and equipment. Hot water also provides temperatures that increase the chemical activites of the various ingredients in properly compounded detergents. Friction is an important part of cleaning. The required friction may be applied by brushing with approved brushes or by strong flushing, as in dishwashing machines. Hard abrasives should never be used on any metal surface. They result in scratches which provide lodging places for soil. It is recommended that pots and pans, cooking utensils, and other such items be presoaked to loosen any food clinging to the utensil. Then they should be washed, using the proper detergent compound and hot water. A detergent increases the effectiveness of the water as a cleaning agent. The washed pots and pans must be rinsed with hot water at 125° F then sanitized for one minute in hot water of 180° F.

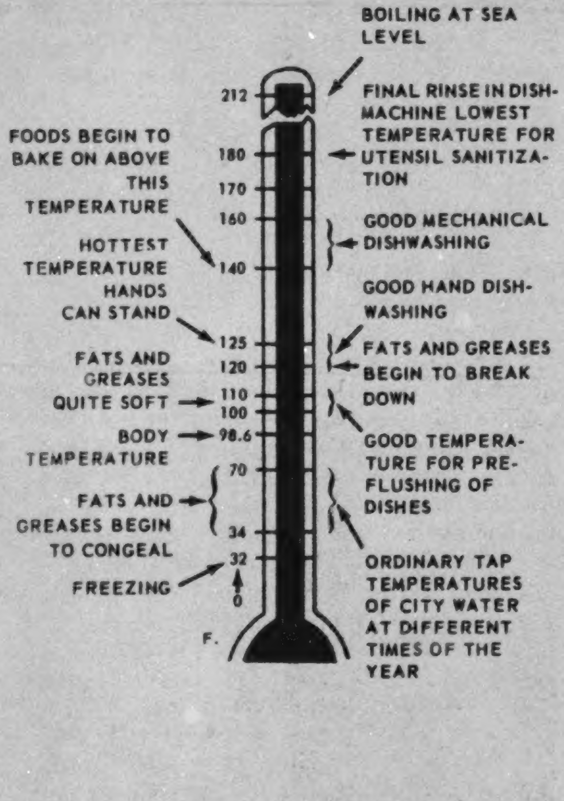
Once washed and sanitized, the clean pots and pans should be stored, bottoms up, in clean racks. Otherwise, the effort spent in washing and sanitizing them is wasted.

Figure 3-1 shows the temperatures necessary for the proper cleaning and sanitizing of food service equipment and utensils.

HAND DISHWASHING

The equipment provided for manual dishwashing varies from a one-compartment sink to the preferred three-compartment sink. A remote dial thermometer and a booster heater should be installed under the final rinse compartment. Regardless of the type of sink on board your ship or station, follow the procedure for dishwashing outlined below:

1. You should have the following items available when you start. Hot water, detergent, bactericidal agent (chlorine or other agent), scraper, garbage can, and long-handled baskets.
2. Scrape food residue from all dinnerware.
3. Sort and stack dinnerware by type. Chipped or cracked glasses or dishes should be discarded at this point.
4. Preflush all dinnerware with warm water to get rid of gravy, sauces, and other surface food residue.
5. Wash the dinnerware in hot (110° to 125° F) water and add the amount of detergent recommended for use when dishwashing by hand.
6. Place each item in the basket; prerinse in hot (110° to 125° F) water. (Use separate baskets for silverware, dishes, cups, and glasses.)
7. Rinse and sanitize dinnerware in hot (180° F) water for 1 minute, or at least 2 minutes at 170° F, or in chlorine solution containing not less than 50 parts per million residual chlorine, or at least one minute at a temperature of 75° to 80° F. (Higher temperatures cause solution to become unstable.)
8. Lift the basket out of the hot water; place it on the drainboard and air dry.


BOILING AT SEA LEVEL
212
FINAL RINSE IN DISH-MACHINE LOWEST TEMPERATURE FOR UTENSIL SANITIZATION
FOODS BEGIN TO BAKE ON ABOVE THIS TEMPERATURE
180
170
160
GOOD MECHANICAL DISHWASHING
HOTTEST TEMPERATURE HANDS CAN STAND
140
GOOD HAND DISHWASHING
125
120
FATS AND GREASES BEGIN TO BREAK DOWN
FATS AND GREASES QUITE SOFT
110
100
BODY TEMPERATURE
98.6
70
GOOD TEMPERATURE FOR PRE-FLUSHING OF DISHES
FATS AND GREASES BEGIN TO CONGEAL
34
32
FREEZING
0
F.
ORDINARY TAP TEMPERATURES OF CITY WATER AT DIFFERENT TIMES OF THE YEAR

33.11

Figure 3-1.—Temperatures necessary for proper sanitizing of food service equipment and utensils.

After the dishes have been washed and sanitized, the residual heat left in them aids in rapid air-drying. DO NOT DRY EQUIPMENT/UTENSILS WITH A TOWEL OR TOWELING since many bacteria may be added by an unclean dish towel. Use only detergents. The use of soap is prohibited in hand or machine dishwashing.

MACHINE DISHWASHING

There are various types of machine dishwashers used by the Navy. The details of sanitation, proper operating temperatures, and operating procedures are covered in chapter 5, Operation and Care of Food Service Equipment.

Always remember that strict sanitation procedures should be followed in all areas of a food service operation. Cleanliness can never be overemphasized.

CLEANLINESS OF FOOD SERVICE SPACES

It will be easier to keep food service spaces clean and sanitary if everyone cooperates. Wipe up small spills before they are tracked all over the galley or out into other spaces. This is not only easier, it could save someone (perhaps you) from a painful fall. Don't permit food scraps or debris to accumulate.

The two areas discussed below require constant attention for proper sanitation.

GARBAGE AND TRASH DISPOSAL

The method of collection and disposal of garbage may differ on various ships and stations, but the basic requirements are the same. Garbage must be disposed of promptly to prevent contamination of spaces, and to eliminate a possible fire hazard. Garbage collection areas must be thoroughly cleaned, and garbage and refuse cans must be thoroughly cleaned each day. Never leave garbage or trash in the galley or wardroom overnight.

Plastic garbage can liners are available through the supply system, and their use will eliminate much of the work required to keep garbage cans clean. These liners are placed in the cans before use and are disposed of when the cans are emptied.

When your ship is docked, garbage must be taken to the pier, where separate containers are provided for garbage and trash. Do not use trash cans for wet garbage. Always replace the lids on these cans, and do not spill garbage and refuse in dock areas. Remember, insects and rodents must have food and moisture, and garbage provides both.

In wartime, garbage or other objects must not be dumped overboard because they may provide clues to your location for enemy submarines or other craft. In such cases dispose of garbage according to the instructions of your ship.

INSECT AND RODENT CONTROL

There are many kinds of galley pests, but the most common are flies, roaches, and mice (rarely rats). Great losses result from insect and rodent damage to subsistence and many other items of property in the absence of effective control programs.

Your commanding officer will set up such programs for the entire activity, but this does not relieve you of the responsibility for ensuring that precautions are carried out for insect and rodent control in galley spaces. The best control measures for insects and rodents are the proper cleaning of galley spaces and the proper collection and disposal of all refuse. Mice will not live where they cannot get food. The presence of roaches indicates unsanitary conditions. Such insects will come aboard in crates of food so that continual high sanitation standards must be maintained.

To ensure that insects and rodents do not contaminate food, utensils, and dishes, you must maintain constant vigilance and observe the following rules:

1. Keep all galley spaces clean.
2. Clean up spilled foods immediately.
3. Be sure to thaw meat in the thaw box–never in the passageway or on the meat block.
4. Cover all goods that are not actually being prepared.
5. Leave no food exposed overnight.
6. Keep equipment clean.
7. Remove all crumbs and food particles from tables at the end of each meal.
8. Dispose of all refuse promptly.
9. Keep refuse cans covered tightly; empty, wash, and scald them regularly.
10. Kill flies and roaches with sprays and powders.
11. Use traps for catching rats and mice.

When routine sanitary measures are not effective to control or eliminate insects and rodents, notify your medical officer or medical department representative immediately. He will advise you concerning the use of more drastic, corrective action.

Although it is the direct responsibility of the medical department to prescribe and use insecticides or poisons, you may be called on to assist the corpsman and in some cases even do the work yourself under the supervision of the medical officer or medical department representative. Information about the latest types of insecticide and where to get them can be obtained from the medical department.

Poison baits are often recommended to supplement rat and mouse trapping. They are effective in rodent control, but they must be used with all recommended safeguards since they are also poisonous to humans.

Insecticides and poisons should NEVER be stored in galley spaces. Either use them immediately or return them to the medical department.

DEFENSE AGAINST RADIOLOGICAL AGENTS

Radiological defense includes all such measures as are taken to minimize personnel and material damage from radioactivity. The basic responsibility for this function resides with the damage control organization of the ship or station. Your basic guidance in radiological defense matters will come from them. Supply department personnel are normally assigned appropriate duties in accordance with the damage control plan. You should be aware of the plans and procedures to be followed on board your ship or station. Familiarize yourself with the appropriate portions of the following publications:

Disaster Control (Ashore and Afloat) NAVPERS 10899-B

Basic Military Requirements NAVPERS 10054-D

Emergency operations are those that immediately follow the blast. During this period, a realistic evaluation of the disaster is made, and initial steps toward recovery are taken. Protective clothing, monitoring equipment, and decontamination gear will be needed.

RADIOLOGICAL CONTAMINATION

Blast damage and thermal radiation may result in partial or complete destruction of dining facilities and of subsistence items. Radioactivity is important because of the effect it has on the human body. Because of its ability to penetrate matter deeply, gamma radiation is usually considered to be the most hazardous. Since the principal source of alpha particles would be the unfissioned nuclear material of the weapon, the probability of significant alpha contamination from nuclear detonation is small. Beta particles have poor penetrating ability. Ordinary clothing will stop beta particles. They enter the skin to a depth of about 1/5 inch but their ionizing power is about 100 times that of gamma rays. When ingested with food, inhaled, or admitted into the body through cuts or open wounds, beta particles meet no barriers and become particulary destructive if they are retained in the body for some time. Therefore, in food preparation and service, all forms of radioactivity should be regarded as hazardous.

Radioactivity may be introduced into exposed materials which are close to the burst. Such items as soap, table salt, copper, or brass may become radioactive as a result of radiation (the action of neutrons). Radioactivity may also be carried by blast residues, the principal one being dust particles. A person contaminated by radioactive materials can easily contaminate an otherwise safe object or area. If he handles foods, the foods can become contaminated. Radioactivity cannot be destroyed by cooking or sterilization, or neutralized by chemical treatment. It must be removed as completely as possible to a limit of radioactivity set by the command authority in the light of existing circumstances.

MONITORING TO DETERMINE EXTENT OF RADIOACTIVITY

Radioactive materials can only be removed by physical means. The extent of radioactivity existing in any food preparation or serving area should be determined by a survey with radiac monitoring equipment. This includes the galley, utensils, food for preparation, dinnerware, the scullery, and all personnel involved in food preparation and service. If the survey so indicates, it may be necessary to reestablish the dining facility in another area designated as safe by the commanding officer.

The supply officer is responsible for taking the necessary precautions to ensure that the food served is free from radioactive contamination. Galleys and other food preparation spaces, food, equipment, utensils, dinnerware, and personnel engaged in the food service operation should be carefully monitored by qualified persons with appropriate monitoring equipment to ascertain the presence and the extent of radioactive contamination.

Decontamination operations should be carried out as required. Subsistence items in glass or metal containers or sealed in barrier-wrap packages will be the least likely to be contaminated. These should, nevertheless, be monitored, and care should be exercised upon opening such packages to avoid contamination. The fresh water supply should be monitored. Subsistence items should be monitored in their dry state because dilution with water will substantially lower the beta readings and the presence of alpha particles may not even show up on radiac instruments. All subsistence items, when they have been monitored, must be clearly marked as "contaminated" or "safe for use." All subsistence items should be cleared for use after monitoring if found to be within acceptable limits established by the local command in accordance with *Radiation Health Protection Manual* (NAVMED P-5055).

RADIOLOGICAL DECONTAMINATION

There are various methods of removing contamination. They differ in effectiveness in removing the contaminant, in applicability to given surfaces, and in the rate of operation. These, in general, fall into two classes, gross or rough decontamination and detailed decontamination. Gross decontamination consists of a rapid washing down with large quantities of uncontaminated water from a firehose or nozzle system. This class is generally not suitable for use in galley and dining areas except for decks. Detailed decontamination procedures are more thorough. These procedures are costly in time, manpower, and material, but they are more effective. Detailed decontamination will be necessary in galley and dining areas. Efforts to decontaminate with heavily contaminated water will obviously be ineffective; however, water contaminated to a lesser degree than the surface contamination to be removed may still be used. Water used for decontamination must be allowed to drain freely from contaminated areas. Water from tightly covered storage tanks should be safe and potable, provided the circulating system is tight. Water from open reservoirs cannot be relied upon to be free from contamination. Sea water in the neighborhood of an aerial burst to windward will be contaminated at the surface. A subsurface burst will heavily contaminate sea water in the vicinity. General knowledge of the local situation and a monitor survey should provide data on which a decision regarding the water supply will be based.

When materials (cleaning agents) specifically designed for the removal of radioactive contaminants are available, they should be used in accordance with instructions. When they are not available, the following solutions are suggested for the general cleaning of galley surfaces:

Formula 1

Detergent, general purpose, liquid, water soluble, Type I. . .1/2 pound. Military specification MIL-D-16791.

Sodium phosphate, tribasic, technical (trisodium phosphate). . .1/2 pound. Federal Specification O-S-642, Type II.

Water, hot. . .(12 gallons). . .100 pounds.

Directions: The sodium phosphate should be completely dissolved by stirring it into hot water. The sirupy liquid detergent should be added and stirred until it is thoroughly dispersed.

Formula 2

Dishwashing compound, machine, granular, free flowing. Federal specification P-D-425a (specify whether hard or soft water will be used).

Directions: The compound should be dissolved in hot water to make a 0.5 percent (approximate) solution (1 pound per 25 gallons of water).

The solution should be hot when it is used.

Formula 3

Citric acid, monohydrate, granular form. Military specification MIL-A-11029 (Cml) Change No. 3223.

Directions: Citric acid should be dissolved by stirring to make a 3 percent (approximate) solution (3 pounds in 12 gallons of water). In use, utensils should be immersed and metal surfaces should be sprayed.

Except for citric acid, the above materials are commonly used and are readily available. The suggested formulas are not intended to take the place of agents specified in existing decontamination instructions. They constitute the bare minimum as substitutes and should serve to meet immediate emergency requirements. All chemical cleaning agents function most efficiently when hot. The choice of method and cleaning agent to be used should depend upon the nature of the surface to be decontaminated, the kind and degree of contamination, and the time, manpower, and materials available to do the work.

Decontaminating Foods

All subsistence should be carefully monitored. Foods in metal or glass packages may be safe. Contamination is best removed from the external surfaces by washing. Food items in sealed dustproof packages may also be safe, provided the wrapper is not broken. To remove the contamination from these packages, vacuum them and carefully remove the outer wrap. Some vegetables can also be decontaminated if they are carefully washed, dried, monitored, and peeled–if monitoring shows contamination is not above specified limits. When surface contamination cannot be physically removed, the food should be condemned. All foods must be inspected and approved by the medical officer.

Decontaminating Spaces and Equipment

Thorough cleaning of all surfaces is vital. Work should commence overhead and continue downward in the direction of liquid flow. When feasible, the first step should consist of flushing the surfaces with clean water. DO NOT get water on electrical controls that are not waterproofed. The second step involves systematic scrubbing with chemical cleaning agents. Piping, duct work, stanchions, bulkheads, coamings, and decks should be repeatedly scrubbed until monitoring indicates that a safe condition exists. Bare metal surfaces should be given an initial scrubbing with alkaline detergents to remove grease film. When available, citric acid solution should then be applied and allowed to remain for a minimum period of 10 minutes. Rinse the surface with clean fresh water, allow to dry, and monitor. In the absence of citric acid, vinegar may be used, but it is less effective.

Decontaminating Utensils and Dinnerware

Treat metal utensils and dinnerware such as metal tableware, and cutlery in the same manner as other metal surfaces. Wash with a detergent followed by an acid treatment. When possible, immerse utensils and dinnerware in the acid solution. Crockery and glass present no particular cleaning problem, provided the glazed surfaces are without scratches or foreign deposits such as stains or hard water scale. Plasticware may present some difficulty because of the relatively porous character of the surface, scratches, and the presence of foreign deposits. Both glass and plasticware should be machine-washed, rinsed, dried, and each item monitored. Those that do not pass should be inspected for cracks and surface defects. Cracked and badly scratched items should be disposed of immediately. The other items still showing contamination should be given repeated washings until safe, or they should be segregated to await natural decay of contamination or disposal of the item.

Protection of Personnel

When you are engaged in decontamination, wear protective clothing as prescribed by the ship's Damage Control Bill. If protective clothing is not available, similar garments may be substituted. Care must be taken that substitute clothing adequately prevents radioactive particles from coming in contact with the skin or gaining entry to the body by ingestion, inhalation, or through breaks in the skin. Masks should be worn. In the absence of regulation masks, goggles or glasses should be worn to protect the eyes; and a filter improvised from serveral layers of turkish toweling should be worn over the nose and mouth to protect the lungs.

Spaces that were not contaminated, or which have been decontaminated, must be carefully protected. All personnel and material must be carefully monitored (decontaminated if needed) before anyone is permitted to enter these spaces. Cleaning gear, items of protective clothing, and so forth, used in decontamination procedures should be segregated and disposed of as contaminated, according to their level of contamination.

To familiarize yourself with protective clothing and equipment, and with the procedure for adapting regular issue clothing for NBC warfare protection, see *Basic Military Requirements*, NAVPERS 10054-D.

Preventing Recontamination

Contaminated items brought accidentally into spaces should be removed and, pending decontamination of the affected areas, these areas should be roped off. Personnel who may have walked through these areas or who may have otherwise come in contact with radioactive particles should be sent to the decontamination station.

DEFENSE AGAINST BIOLOGICAL AGENTS

The United States has renounced all use of biological agents in warfare, but the need still exists to be prepared to defend ourselves against these agents if other countries should use them. The following section, therefore, discusses the nature of biological agents and the measures you should use to decontaminate the galley, dining areas, and food storage spaces in the event of enemy biological attack.

A biological agent is defined as a microorganism which causes disease in man, plants, or animals or causes the deterioration of material.

The chief objective of biological agents is mass infection which results in the incapacitation or death of large numbers of individuals or in the destruction of their sources of food, both animal and plant, or perhaps both. The biological agents, unlike most other weapons, act on living matter only and are limited in use to these objectives.

In case of a biological attack, there are certain instructions that should be carried out for the protection and decontamination of eating, drinking, and galley utensils; galley and food service equipment; and dining areas contaminated by biological agents.

Good sanitary and hygienic practices are the best defenses against many aspects of biological warfare. A close examination of the cleanliness of the dining facility and strict adherence to the applicable instructions will improve biological defense greatly.

The problems of biological agents differ from ordinary military hygiene problems only in that hardier types of organisms may be present in other than their normal environment and in higher levels of contamination.

BIOLOGICAL CONTAMINATION

In treating the problem of biological attack, it is assumed that there could be contamination of personnel, of all exposed surfaces, and of circulating air. Because of the current difficulties in rapidly detecting biological agents, knowledge of contamination might (although not necessarily) be based on the occurrence of widespread or unusual sickness. This sickness could be caused by contamination that had occurred several days or weeks before. A situation could exist also whereby extensive employment of biological agents would require additional precautions in the operation of all dining facilities. These instructions are intended for use in the event of suspected or known biological attack. The problem is to decontaminate and prevent recontamination.

Biological Decontamination Methods

Formalin vaporized by an insecticide fog applicator is an effective decontaminant and should be used under most circumstances for decontamination of galley and food service spaces. It is somewhat corrosive and leaves a disagreeable formaldehyde odor which is difficult to remove. Formalin vapor limitations are:

1. It is toxic to man.
2. It must remain 16 to 24 hours to be effective.
3. It damages delicate instruments.
4. Spaces must be aired for 24 hours after its use.
5. Masks, protective clothing, and rubber gloves must be worn by all personnel in the area.

Ethylene oxide gas also is an effective decontaminant. It leaves no objectionable odors and is noncorrosive. It is, however, practicable only for small spaces, requires considerable preparation, and is not always available. It is used primarily to decontaminate equipment. Ethylene oxide gas limitations are:

1. It is highly explosive.
2. It is toxic.
3. Masks, protective clothing, and gloves must be worn by all personnel in the area.

If neither formalin nor ethylene oxide is available or if their use as fumigants is not feasible, the interior surfaces of the contaminated spaces should be scrubbed down with an effective detergent solution (discussed in the Radiological Decontamination section earlier in this chapter) to remove dust, grease, and so forth; next, surfaces should be hosed with clean, fresh, safe water to remove residual soil and detergent solution; then surfaces should be sprayed or scrubbed with water to which 200 ppm (parts per million) available chlorine has been added. Iodophors solution, phenolic solutions, or formalin solutions—although they are less desirable than chlorine—may be used if prepared as advised by the medical department.

Large equipment (those items too large to be immersed in sinks or run through dishwashing machines) should be washed, rinsed, and decontaminated in the same manner as prescribed for interior surfaces of dining facilities. Small items of equipment which will not suffer damage by immersion should be washed, rinsed, and sanitized in the dishwashing machine or by hand dishwashing as described earlier in this chapter.

Before eating and drinking utensils are brought to the scullery for decontamination, the interior bulkheads, all working surfaces (tables, dishcarts, and sinks), the interior and exterior of the dishwashing machine, and all other equipment used in the washing and sanitizing of eating and drinking utensils should be thoroughly washed, rinsed, and decontaminated as appropriate with formalin, ethylene oxide, or a detergent solution. Remember, both formalin and ethylene oxide are toxic to man, and therefore after they are used to decontaminate equipment or spaces a rinsing in safe water should be given all affected areas.

Eating and drinking utensils should be decontaminated by machine or hand washing. A person who has handled contaminated utensils should not handle decontaminated utensils until he has been decontaminated. Decontaminated articles should not be placed in contact with any surface which has been exposed to contamination. If possible, use baskets or containers designed to hold silverware in a vertical position, handle down, during the washing and sanitizing processes, and additional containers of similar construction into which the silverware may be inverted without being handled by workers. If such containers are not available, lay the silverware flat in the racks with the handles extending in the same direction. Do not exceed a depth of two utensils. Take care when removing utensils from the racks after decontamination to prevent recontamination.

Sterilization by hypochlorite solution should be used only when dishwashing machines do not operate correctly. The utensils should be soaked, while still in the washrack, for one full minute at 100°-140° F in a solution of one part hypochlorite and 50 parts water in a single-tank machine, or one part hypochlorite and 500 parts water in a double-tank machine; one-fifth of 1 percent of a detergent must be added to either solution. This solution may be mixed from nonionic detergent and with any one of several chlorine containing compounds such as calcium hypochlorite, sodium hypochlorite (javelle water), or chlorinated lime.

In storage, compounds containing chlorine have been known to deteriorate. It will be necessary, therefore, to have a qualified person from the ship's company to analyze the soaking solution for chlorine content to ensure that the proper concentration of available chlorine is attained and continued at sufficient strength.

After the sterilization, soak and water rinse, cover the washracks containing the utensils with a cloth that has been sterilized by boiling. Do not transfer utensils to another rack. Ensure that personnel in the serving line pick up utensils from the washracks by touching only the handles.

Large equipment may be decontaminated by the use of hypochlorites. Hypochlorites are corrosive to all metals that will rust and should not be allowed to come in contact with motors and other electrical equipment from which such hypochlorites could not be thoroughly wiped off. After decontamination, cover as much of the equipment as possible with sterile cloths.

Avoidance of Recontamination

Recontamination may be caused by secondary aerosols which resettle organisms on surfaces or contaminate the air that is breathed. Secondary aerosols are clouds formed from particles (bacteria or other organisms) which, having been deposited on a surface, are stirred up into the air again by scuffing, shaking, or other mechanical action. Secondary aerosols may be suppressed by wetting surfaces with oil or water.

It is important to ensure that, before entering the dining area, MS personnel and all personnel eating in the dining areas are as free as possible from contamination. The medical officer should be consulted on the decontamination of food service personnel. In cold weather, personnel in the serving line should be required to remove outer garments and leave them outside the dining area prior to entering the dining area. It has been found that removing clothing will shake off organisms which have come in contact with the surfaces, thereby setting up secondary aerosols. Do not permit unauthorized personnel in food service spaces.

Decontaminating Subsistence Items

The advice of the medical officer must be sought before any attempt is made to decontaminate food suspected of biological contamination.

Semi-Perishable Subsistence

Food packed in containers that are resistant to the passage of biological agents (sealed containers made of metal, plastic, glass, or porcelain) requires only that proper exterior decontamination be performed. Paper labels and paper covers must be removed from the container and one of the following methods of decontamination should be used:

1. Immerse the containers for 15 minutes in a solution of water to which 200 ppm (parts per million) available chlorine has been added and then rinse them with potable water.
2. Soak the containers for a minimum of 15 minutes in effective detergent solution as an expedient method to reduce contamination to a safe level (see formula 1 discussed under the heading "Radiological Decontamination"); then rinse them with potable water.
3. The exterior surfaces of stacks of food packed in impermeable packages can be sterilized by vapor disinfectant, such as formalin or ethylene oxide.

Food packages which will not stand immersion must be wiped off with a solution of water to which 200 ppm (parts per million) available chlorine has been added and the food thoroughly cooked before it is eaten.

Food packaged in sacks or other permeable containers can be decontaminated with ethylene oxide, but because of the limited availability of this product it is recommended that such foods be thoroughly cooked before they are eaten.

Fresh or Chill Items

Food that can be peeled or pared may be decontaminated by soaking for 15 minutes in water to which 200 ppm available chlorine has been added before it is peeled. The food must then be thoroughly rinsed in potable water. It can then be peeled or pared and should be rinsed again with potable water. This method has been applied satisfactorily to apples, potatoes, and eggs.

For other fresh or chill items, the use of heat is the most practicable means of decontaminating foods. Thorough cooking will reduce contamination to a safe level so that food can be consumed. Specific methods to be followed in this form of decontamination are discussed later under the heading "Food Preparation Guidelines."

Frozen Items

Food items stowed in the freeze space in impermeable containers (canned frozen strawberries for example) may be decontaminated by immersing the containers for 15 minutes in a solution of water to which 200 ppm available chlorine has been added; the containers are then rinsed with potable water.

Food items stowed in the freeze space in permeable containers (frozen vegetables) may be decontaminated as outlined earlier for food packaged in sacks or other permeable containers.

Food items stowed in freeze space but not contained in outer packaging (meat, for example) must be completely thawed and thoroughly cooked before they are eaten.

Additional Precautions

Hands should be free of contamination during the opening operations to ensure that the contents are not contaminated. Opened cans of fruit jam, jelly, or similar foods must be destroyed. Opened cans of vegetables may be decontaminated by boiling the vegetables for a minimum of 15 minutes in a steam jacketed kettle.

Biological Decontamination in Food Preparation

The use of heat is the most practicable means of decontaminating biologically contaminated foods. In no case should decontaminated food be consumed until it is pronounced safe by a medical officer. It is recommended that, insofar as possible, only foods contained in impermeable packages (cans, bottles, jars) be decontaminated and used for meal preparation.

Food items which are not packaged or those that are packaged in permeable containers may be cooked by either of the following methods:

1. In a pressure-type cooker at 15 pounds pressure at 250° F 121° C for 15 minutes.
2. Boiling for a minimum of 15 minutes.

Certain contaminated items may be decontaminated by baking. Only those recipes listed in the *Armed Forces Recipe Service* which specify an oven temperature of 400° F and above, for a cooking period of 30 minutes or longer, should be used to prepare baked items from contaminated ingredients.

All meats except those contained in decontaminated impermeable containers (canned meat items) must be cooked to the well done stage. Guidance cards in the *Armed Forces Recipe Service* include information on internal temperature indicating the well done stage.

Biological Decontamination of Water

The detection of water contamination and requisite laboratory analysis are responsibilities of the medical department. Biological decontamination of water is not difficult when regular water treatment facilities exist. However, more chlorine probably will need to be added during the ordinary processing of the water. If no water treatment facilities are available, water can be decontaminated by any of the following methods:

1. By boiling for 20 minutes.
2. By distillation, if equipment is available.
3. By using iodine tablets coupled with boiling.

A medical officer should approve the method of decontaminating; after the decontamination process, he should determine whether or not the water is fit to be used.

Water that has been decontaminated must be protected against further contamination.

CHEMICAL AGENTS

The United States has committed itself against initiating the use of chemical agents. However, it is necessary to be prepared against attack by an enemy using this type of warfare.

A chemical agent is defined as a solid, liquid, or gas which, through its chemical properties, produces lethal or damaging effects on man, animals, plants, or material, or produces a screening or signaling smoke.

Chemical warfare agents, like the biological warfare agents, are used mainly because of their effect on personnel, although some agents will have a corrosive effect on specific materials, and incendiary devices will burn most materials. These agents produce a harmful physiological reaction when applied to the body externally, inhaled, or ingested. Most chemical agents cause disorganization of the functioning of the body.

The publication, *Disaster Control,* NAVPERS 10899, contains descriptions of potential chemical agents; methods of detection and identification of the various agents; material, equipment, and clothing to be used by decontamination personnel; and the methods of decontamination to be employed in the recovery of various areas, spaces, materials, and objects.

The following paragraphs prescribe the methods to be used in decontaminating eating, drinking, and galley utensils; galley and food service equipment; and dining areas in an area contaminated by chemical agents.

DECONTAMINATION

The degree of contamination of the dining area and equipment depends on the chemical agent used and the factors involved, such as the method of delivery (vapor, light liquid, and heavy liquid), the weather, and the various strengths of contaminants.

Vapor Contaminations

After the surrounding areas have been decontaminated, the entire dining facility should be aerated thoroughly and the entire area washed down inside and out with clean water. All equipment and utensils used in the preparation and service of food should be washed carefully using normal procedures. Spaces, utensils, and equipment should then be tested with the chemical agent detector kit and, if necessary, any of the prescribed procedures should be repeated.

Light Liquid Contamination

The dining facility, inside and out, should be washed with hot water. You may add an alkaline detergent, such as a standard dishwashing compound, and if applied at high pressure, it will increase the water's effectiveness. As an alternative method, for mustard gas, you may apply a bleach slurry to all surfaces. After washing down, aerate the entire area. If slight contamination remains, the area should be heated to as high a temperature as possible for about 1 to 2 hours. Then the spaces should be opened and ventilated for 15 minutes. Repeat the procedure as necessary, testing at intervals with a chemical agent detector kit. Porous objects, such as meat blocks and wooden benches, may absorb liquid contamination to the extent that they will have to be destroyed. Metal, glass, or china utensils or any equipment which is not damaged by water should be immersed for 30 minutes in actively boiling water. Add 1 cupful of alkaline detergent to each 5 gallons of water. Upon completion of the boiling process, normal dishwashing procedures should be followed. Plastics generally cannot withstand boiling water and should be destroyed.

Heavy Liquid Contamination

Heavy liquid contamination is unlikely, except from a direct hit, in which case recovery of the space and contents will be a major undertaking. However, when such is the case, the following procedures are recommended.

Space should be roped off or abandoned as unsalvageable, as no amount of washing or scrubbing of a porous surface which is heavily contaminated by a liquid chemical agent (particularly mustard) is likely to do much good.

Metal, glass, or china utensils or any equipment which is not damaged by water, should be decontaminated in the same manner as prescribed for light liquid contamination discussed earlier.

Large equipment unsuited for immersion in boiling water should be scrubbed vigorously with DS2 solution or hot water and an alkaline detergent, rinsed, disassembled, and scrubbed again paying particular attention to any parts not reached in the assembled state which are reachable in the disassembled state. Then, the equipment should be rinsed, dried, oiled, greased, and reassembled. Wooden items should be removed and destroyed.

On electrical equipment, unless the electrical unit is enclosed in a watertight seal, water must not be used in the decontamination process. Electrical equipment should be cleaned with trichloroethane, technical (methyl) chloroform, or DS2 solution. All greases must be removed, bearings cleaned, and the equipment regreased.

DS2 is flammable and irritating to the skin. Protective clothing and masks should be worn when it is used.

Careful inspection must be made of the general situation before large quantities of food or water suspected of chemical agent contamination are destroyed. Contaminated food and water must be destroyed in some cases; in other cases, they may be salvaged by special decontamination procedures. In any event, the responsibility belongs to the medical department to determine whether food or water contaminated by chemical agents should be decontaminated or destroyed.

CHAPTER 4

PROCUREMENT

A Mess Management Specialist may be assigned the duty of maintaining the enlisted dining facility records or the duty of custodian of the storerooms.

The records keeper has the responsibility of preparing procurement documents, posting issues and receipts to inventory control records, maintaining cost records, and preparing the enlisted dining facility returns.

The storeroom custodian is responsible for the proper stowage; making breakouts to the enlisted dining facility and private dining facilities; keeping the spaces clean, safe, and orderly; and keeping the senior MS up to date on the stock level.

This chapter will discuss the afloat accounting procedures, procurement, receipt, and expenditure of subsistence items for the enlisted dining facility as prescribed by *Naval Supply Systems Command Manual* (NAVSUP P-486).

The enlisted dining facility accounting and reporting procedures are based on the quantity of food allowed by the Navy Ration Law and controlled by a system of monetary ration allowances. The system provides a quantity record for each item carried to furnish inventory control information and to accumulate issues to the enlisted dining facility. The system further provides a money value record for control of ration costs.

THE NAVY RATION SYSTEM

The term "ration" may be defined as one day's legal allowance of subsistence for one member or the monetary equivalent. The monetary allowance is computed by multiplying the number of persons authorized to eat in the enlisted dining facility by the current daily ration allowance.

While in port, rations credit is determined by the number of meals actually eaten in the enlisted dining facility. Ashore, ration credits must be verified by the Meal Signature Record (NAVSUP Form 1291). When your ship is underway, ration credit will be taken for each enlisted member on board entitled to be fed in the enlisted dining facility plus meals sold. For ration credit purposes, underway includes the day leaving or entering port regardless of time of day. At the time of this publication the ration system was being revised. For current up to date information refer to *Food-Service Management*, NAVSUP P-486, Chapter 2.

The food service officer is responsible for operating the enlisted dining facility within the limits of the Navy Ration Law (enacted by Congress, US Code 10: 6082), and within specified monetary limits. To perform the function efficiently and to operate within the monetary limits, the food service officer will need your assistance in maintaining accurate up-to-date records. If the monetary limits are exceeded an overissue occurs.

An OVERISSUE is that amount which exceeds the total money value allowed for food for the accounting period.

When an overissue exists at the end of the accounting period, the food service officer must determine the cause and take immediate corrective action to eliminate that cause. The commanding officer must submit a letter report with the returns, stating the cause of the overissue and the corrective action taken.

UNDERISSUE is the amount of difference that results when the total of issues to the enlisted dining facility is less than the total authorized allowance.

Underissues or overissues generated during an accounting period are not carried forward to the following accounting period.

PROCUREMENT

Replenishment of the supplies of food for your ship requires that you have a thorough knowledge of procedures if you are to obtain all the various items you need, in the appropriate quantities, and at the time you need then. You must know how to identify the items, where to procure them, how to decide the quantities needed, how to fill out the appropriate requisition forms or purchase orders, and how to keep records of the requisitions and purchase orders you have submitted.

IDENTIFICATION OF STOCK

The Federal Supply Catalog (FSC) Group 89 Subsistence lists all items authorized for procurement in the enlisted dining facility.

The FSC Group 89 uses a letter coding system to indicate which items are authorized for the different types of dining facilities such as enlisted, private, afloat, ashore, overseas, hospitals and so forth.

You should familiarize yourself with this catalog and the coding system in order to facilitate ordering and to prevent making errors when you are ordering food items for your particular facility. Items which are not authorized for the enlisted dining facility use may be procured for immediate sale to private dining facilities such as Flag, Cabin, CPO, and so forth.

Food items are identified by national stock numbers (NSN) and are issued by standard units of issue. The FSC Group 89 lists, in addition to the nomenclature, NSN and unit of issue (U/I) the issuing service and the perishability code. The perishability code is converted to a fraction code (Cognizance symbol) for use on all requisitions and transfer documents. The codes are converted as follows:

Perishability Code	Cognizance Symbol
NP-nonperishable (semiperishable)	9MF
P-perishable	9MP

The term "perishable" is applied to those items that must be kept under refrigeration and includes fresh fruits and vegetables; frozen meats, fruits, and vegetables; and dairy products. Semiperishable items are those that do not require refrigeration such as canned fruits and vegetables and dry, packed flour, sugar, rice, and so forth.

SOURCE OF SUPPLY

The normal source of supply for food items is the nearest supply support activity or stores ship (AF, AFS, or AOE). Some items, such as fresh dairy and commercial bakery products are available on indefinite delivery contracts. However, when necessary, items may be procured from ships, other than those mentioned, other United States Government activities ashore, or by local purchase from commercial sources. Local purchase from commercial sources may be made only when items cannot be obtained from normal sources. Items purchased in foreign countries must be consumed while the ship is deployed and must not be brought into a United States port. Therefore, only limited quantities of essential food items should be procured from foreign commerical sources.

DETERMINATION OF REQUIREMENTS

On most ships a high and low limit has been established. This limit may change slightly from time to time, based on the quarterly usage data. Some menu planners will use a particular item more often than others and this results in the fluctuation of high and low limits. High and low limits will be discussed more extensively in menu planning in Chapter 6.

The Subsistence Loading Guide designed for your size ship will assist you in setting up new high and low limits; also past usage data will prove to be very helpful.

METHODS OF PROCUREMENT

When you are submitting a provision order to your supply activity there are three basic forms you may use.

1. DOD Single Line Item Requisition System Document DD Form 1348. Each ship receives two sets of DD form 1348, partially punched and interpreted covering all semiperishable items authorized for use. A rough requisition will be prepared using a NAVSUP Form 1059 1A. This rough requisition will serve as a retained record for outstanding requisitions and also will serve as a form which is used to check and identify receipts.
2. Order and Inspection Report NAVSUP Form 48. This form is used for ordering items such as bread, milk, ice cream and pastry or items which are authorized for use in the dining facilities but are not stocked at supply activities and are carried by local vendors. The supply activity will notify all food service activities via contract bulletins of all information regarding authorized vendors.
3. Subsistence Requisition Document NAVSUP Form 1059 A, B, C also 1059 1A, 1B, 1C. These NAVSUP Forms 1059 are used for ordering: perishable and semiperishable food items in their various forms (fresh, frozen and chill).

The subsistence requisition document NAVSUP Form 1059 is a very useful and versitile item. For complete details regarding this form refer to the NAVSUP P-486 Chapter 6. A properly prepared NAVSUP Form 1059 as it should be prepared for a requisition is shown in Figure 4-1. A properly prepared NAVSUP 1348 is shown in Figure 4-2.

Replenishment

The storeroom custodian keeps the senior MS informed on the level of stock. This enables the senior MS to submit requisitions for items which are in need of replenishing. Different supply centers require various amounts of time between requisition date and delivery date. This is called "Lead Time". Familiarize yourself with the requirements in your area and allow ample time for delivery without running yourself short on food.

Other Methods

When items which are not authorized for the enlisted dining facility are requisitioned for immediate sale to a private dining facility, the requisition must contain the statement "For sale to private dining facilities" and the Food Service Management paragraph cited as the authority (NAVSUP P-486, page 3-34, par 3032).

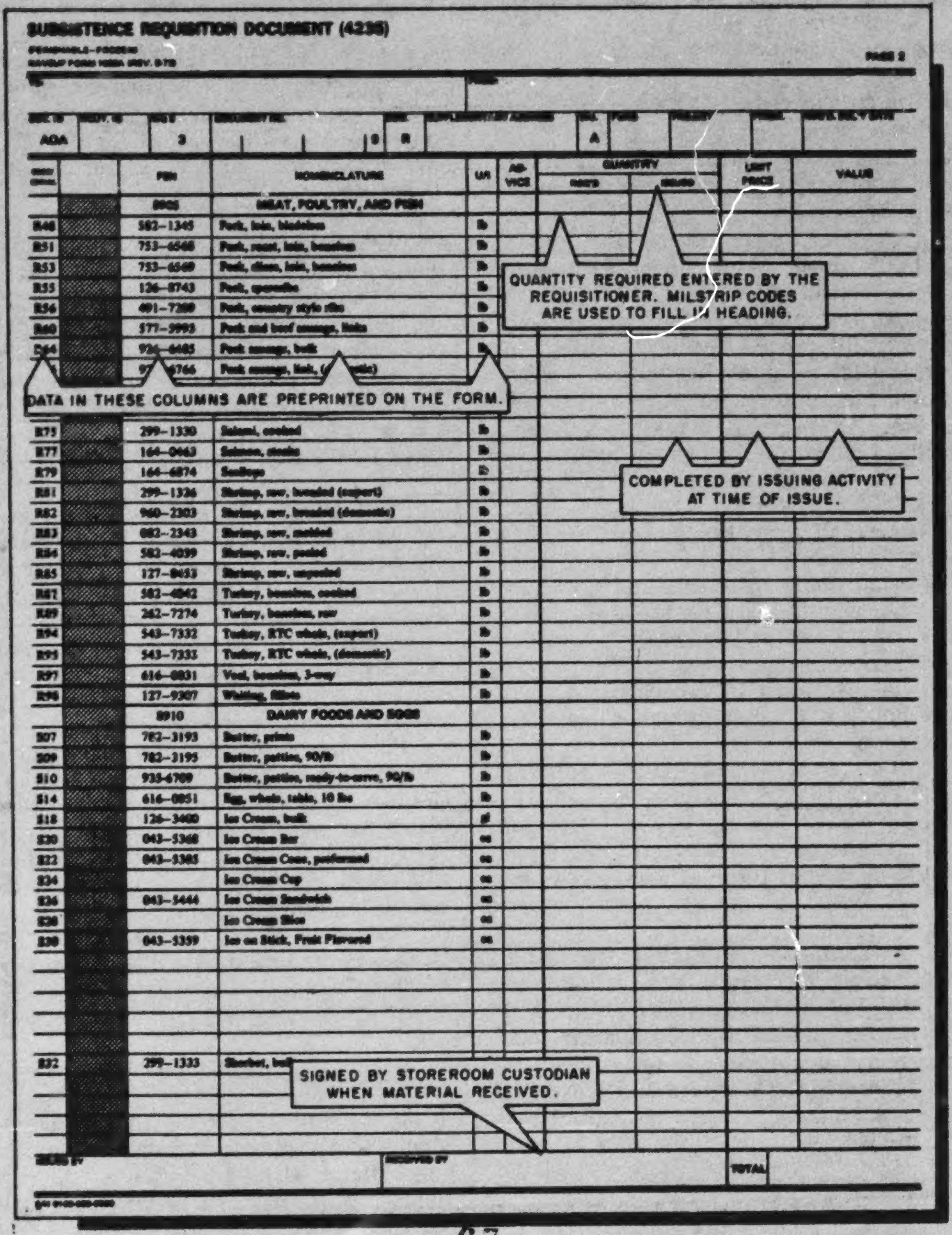
PROCUREMENT RECORDS AND FILES

A Requisition Log (NAVSUP Form 1336) should be prepared in which all requisitions and purchase orders are entered as they are prepared. This record should contain the same information as shown in Figure 4-3. It provides a control over procurement documents and a quick means of identifying outstanding requisitions and purchase orders. The Requisition Log is optional ashore but must be maintained afloat.

Files are maintained for outstanding and completed requisitions and purchase orders. In addition, files may be prepared in which to accumulate the documents required to support the enlisted dining facility operating statement (NAVSUP Form 1358). These files may be labeled to correspond to the various captions on the operating statement. Preparation of the Operating Statement is discussed later in the chapter.

INSPECTION

Most food items will be received from supply activities and are inspected for quantity only. Items that are received direct from commercial suppliers or under contracts which require inspection at the destination must be inspected for quantity and quality. A representative of the medical department is designated to conduct the inspection and



SUBSISTENCE REQUISITION DOCUMENT (4235)

PERISHABLE–FROZEN

PAGE 2

ADA		3		R		A

		FSN	NOMENCLATURE	U/I	ADVICE	QUANTITY REQ'D	QUANTITY ISSUED	UNIT PRICE	VALUE
		8905	MEAT, POULTRY, AND FISH						
R46		582–1345	Pork, loin, bladeless	lb					
R51		753–6548	Pork, roast, loin, boneless	lb					
R53		753–6549	Pork, chops, loin, boneless	lb					
R55		126–8743	Pork, spareribs	lb					
R56		491–7289	Pork, country style ribs	lb					
R60		577–9993	Pork and beef sausage, links	lb					
R64		926–6485	Pork sausage, bulk	lb					
[illegible]		[illegible]6766	Pork sausage, link, ([illegible]tic)						
R75		299–1330	Salami, cooked	lb					
R77		164–0463	Salmon, steaks	lb					
R79		164–6874	Scallops	lb					
R81		299–1326	Shrimp, raw, breaded (export)	lb					
R82		960–2303	Shrimp, raw, breaded (domestic)	lb					
R83		082–2343	Shrimp, raw, molded	lb					
R84		582–4039	Shrimp, raw, peeled	lb					
R85		127–8453	Shrimp, raw, unpeeled	lb					
R87		582–4042	Turkey, boneless, cooked	lb					
R89		262–7274	Turkey, boneless, raw	lb					
R94		543–7332	Turkey, RTC whole, (export)	lb					
R95		543–7333	Turkey, RTC whole, (domestic)	lb					
R97		616–0831	Veal, boneless, 3-way	lb					
R98		127–9307	Whiting, fillets	lb					
		8910	DAIRY FOODS AND EGGS						
S07		782–3193	Butter, prints	lb					
S09		782–3195	Butter, patties, 90/lb	lb					
S10		935-6709	Butter, patties, ready-to-serve, 90/lb	lb					
S14		616–0851	Egg, whole, table, 10 lbs	lb					
S18		126–3400	Ice Cream, bulk	gl					
S20		043–5368	Ice Cream Bar	ea					
S22		043–5385	Ice Cream Cone, preformed	ea					
S24			Ice Cream Cup	ea					
S26		043–5444	Ice Cream Sandwich	ea					
S28			Ice Cream Slice	ea					
S30		043–5359	Ice on Stick, Fruit Flavored	ea					
S32		299–1333	Sherbet, bu[illegible]						

ISSUED BY

RECEIVED BY

TOTAL

QUANTITY REQUIRED ENTERED BY THE REQUISITIONER. MILSTRIP CODES ARE USED TO FILL IN HEADING.

DATA IN THESE COLUMNS ARE PREPRINTED ON THE FORM.

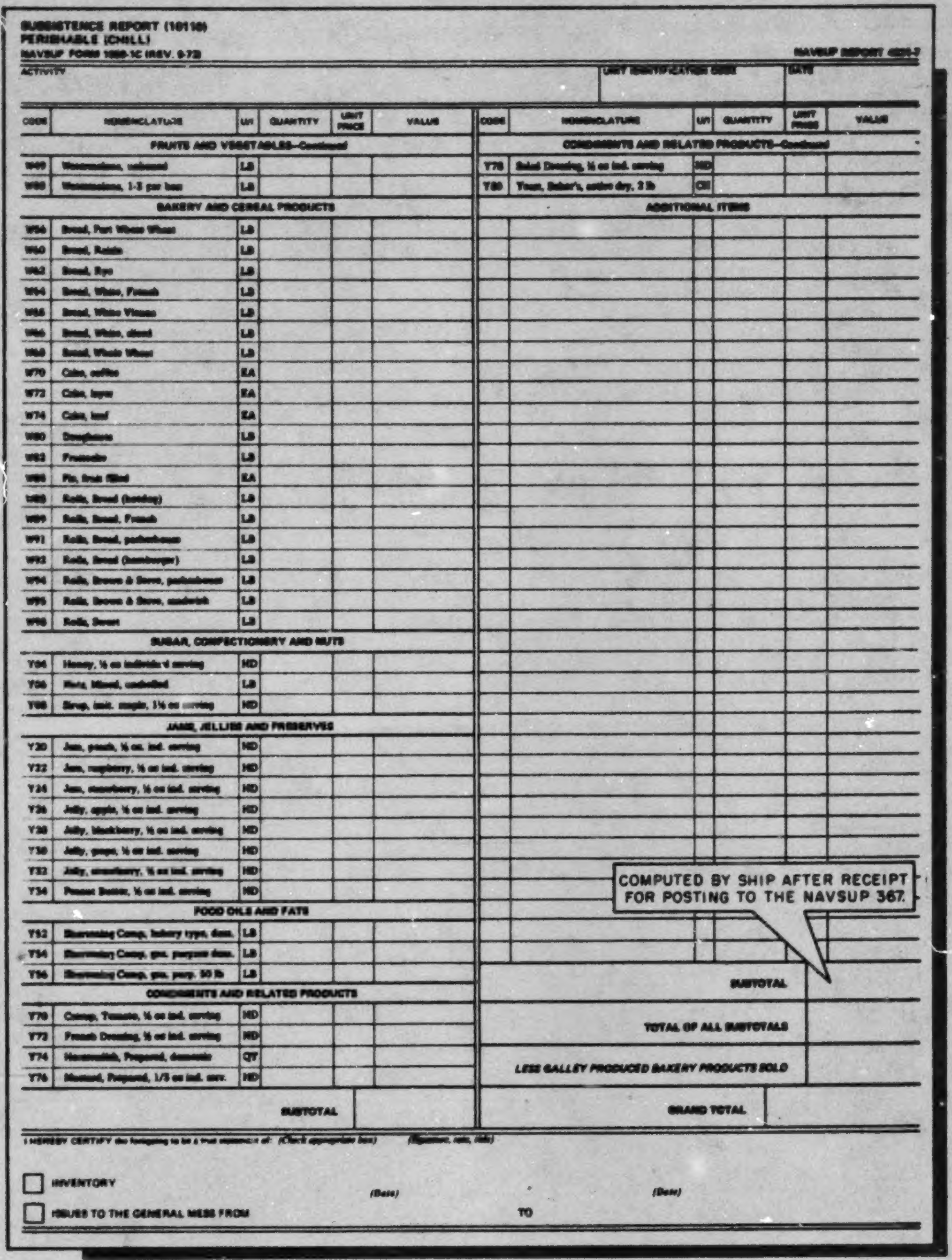
COMPLETED BY ISSUING ACTIVITY AT TIME OF ISSUE.

SIGNED BY STOREROOM CUSTODIAN WHEN MATERIAL RECEIVED.

67

48.29

Figure 4-1.—Subsistence Requisition Document.



SUBSISTENCE REPORT (10110)
PERISHABLE (CHILL)
NAVSUP FORM 1059-1C (REV. 9-72)

NAVSUP REPORT 4235-7

ACTIVITY	UNIT IDENTIFICATION CODE	DATE

CODE	NOMENCLATURE	U/I	QUANTITY	UNIT PRICE	VALUE
	FRUITS AND VEGETABLES—Continued				
W49	Watermelons, unboxed	LB			
W50	Watermelons, 1-3 per box	LB			
	BAKERY AND CEREAL PRODUCTS				
W56	Bread, Part Whole Wheat	LB			
W60	Bread, Raisin	LB			
W62	Bread, Rye	LB			
W64	Bread, White, French	LB			
W65	Bread, White Vienna	LB			
W66	Bread, White, sliced	LB			
W68	Bread, Whole Wheat	LB			
W70	Cake, coffee	EA			
W72	Cake, layer	EA			
W74	Cake, loaf	EA			
W80	Doughnuts	LB			
W82	Fruitcake	LB			
W86	Pie, fruit filled	EA			
W88	Rolls, Bread (hotdog)	LB			
W89	Rolls, Bread, French	LB			
W91	Rolls, Bread, parkerhouse	LB			
W93	Rolls, Bread (hamburger)	LB			
W94	Rolls, Brown & Serve, parkerhouse	LB			
W95	Rolls, Brown & Serve, sandwich	LB			
W98	Rolls, Sweet	LB			
	SUGAR, CONFECTIONERY AND NUTS				
Y04	Honey, ½ oz individual serving	HD			
Y06	Nuts, Mixed, unshelled	LB			
Y08	Syrup, imit. maple, 1½ oz serving	HD			
	JAMS, JELLIES AND PRESERVES				
Y20	Jam, peach, ½ oz. ind. serving	HD			
Y22	Jam, raspberry, ½ oz ind. serving	HD			
Y24	Jam, strawberry, ½ oz ind. serving	HD			
Y26	Jelly, apple, ½ oz ind. serving	HD			
Y28	Jelly, blackberry, ½ oz ind. serving	HD			
Y30	Jelly, grape, ½ oz ind. serving	HD			
Y32	Jelly, strawberry, ½ oz ind. serving	HD			
Y34	Peanut Butter, ½ oz ind. serving	HD			
	FOOD OILS AND FATS				
Y52	Shortening Comp, bakery type, dom.	LB			
Y54	Shortening Comp, gen. purpose dom.	LB			
Y56	Shortening Comp, gen. purp. 50 lb	LB			
	CONDIMENTS AND RELATED PRODUCTS				
Y70	Catsup, Tomato, ½ oz ind. serving	HD			
Y72	French Dressing, ½ oz ind. serving	HD			
Y74	Horseradish, Prepared, domestic	QT			
Y76	Mustard, Prepared, 1/3 oz ind. serv.	HD			
				SUBTOTAL	

CODE	NOMENCLATURE	U/I	QUANTITY	UNIT PRICE	VALUE
	CONDIMENTS AND RELATED PRODUCTS—Continued				
Y78	Salad Dressing, ½ oz ind. serving	HD			
Y80	Yeast, Baker's, active dry, 2 lb	CN			
	ADDITIONAL ITEMS				
				SUBTOTAL	
				TOTAL OF ALL SUBTOTALS	
				LESS GALLEY PRODUCED BAKERY PRODUCTS SOLD	
				GRAND TOTAL	

COMPUTED BY SHIP AFTER RECEIPT FOR POSTING TO THE NAVSUP 367.

I HEREBY CERTIFY the foregoing to be a true statement of: *(Check appropriate box)* *(Signature, rate, title)*

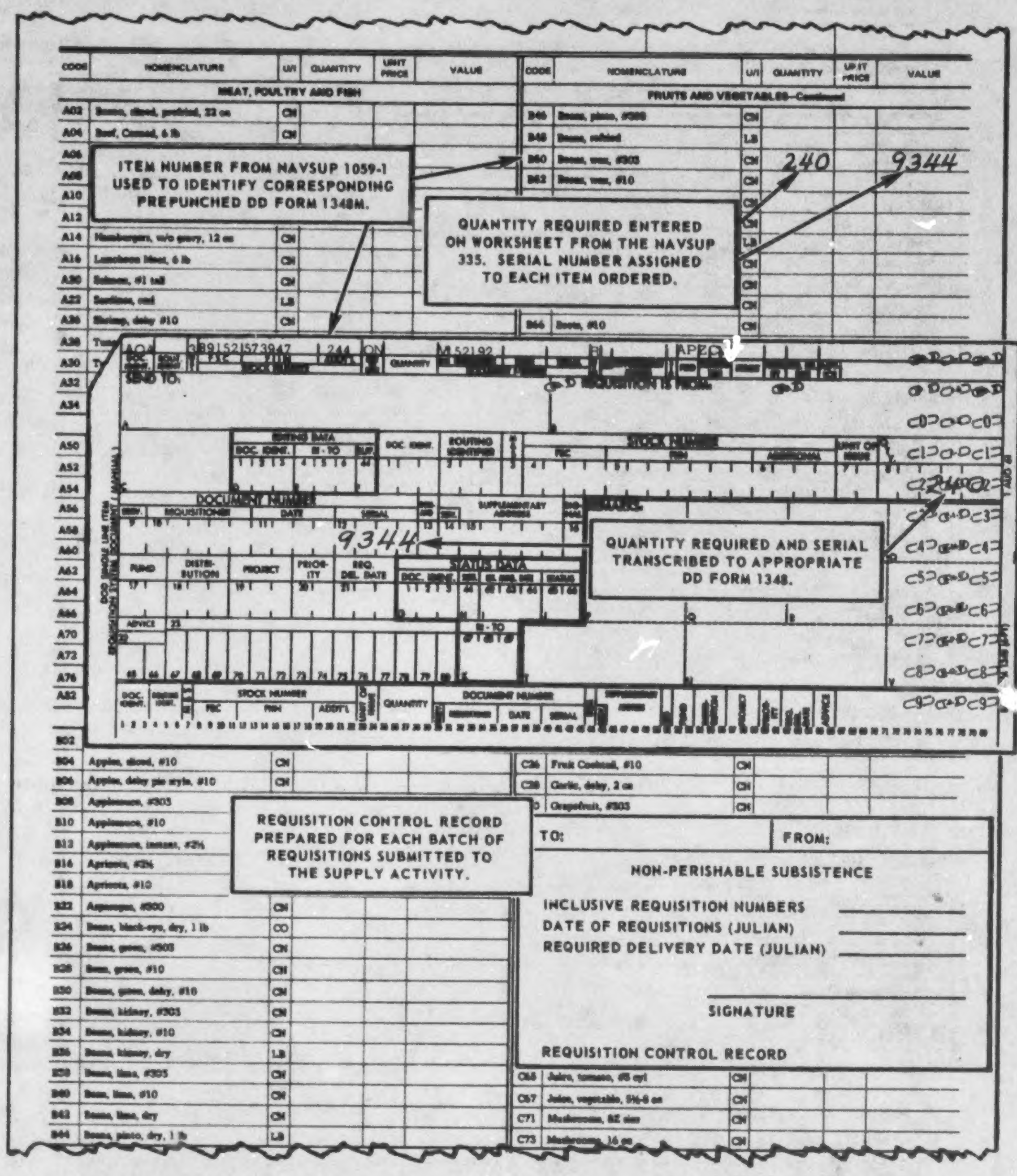
☐ INVENTORY *(Date)*

☐ ISSUES TO THE GENERAL MESS FROM *(Date)* TO

68

48.29

Figure 4-1.—Subsistence Requisition Document (Continued).



ITEM NUMBER FROM NAVSUP 1059-1 USED TO IDENTIFY CORRESPONDING PREPUNCHED DD FORM 1348M.

QUANTITY REQUIRED ENTERED ON WORKSHEET FROM THE NAVSUP 335. SERIAL NUMBER ASSIGNED TO EACH ITEM ORDERED.

QUANTITY REQUIRED AND SERIAL TRANSCRIBED TO APPROPRIATE DD FORM 1348.

REQUISITION CONTROL RECORD PREPARED FOR EACH BATCH OF REQUISITIONS SUBMITTED TO THE SUPPLY ACTIVITY.

TO:　　FROM:

NON-PERISHABLE SUBSISTENCE

INCLUSIVE REQUISITION NUMBERS ______

DATE OF REQUISITIONS (JULIAN) ______

REQUIRED DELIVERY DATE (JULIAN) ______

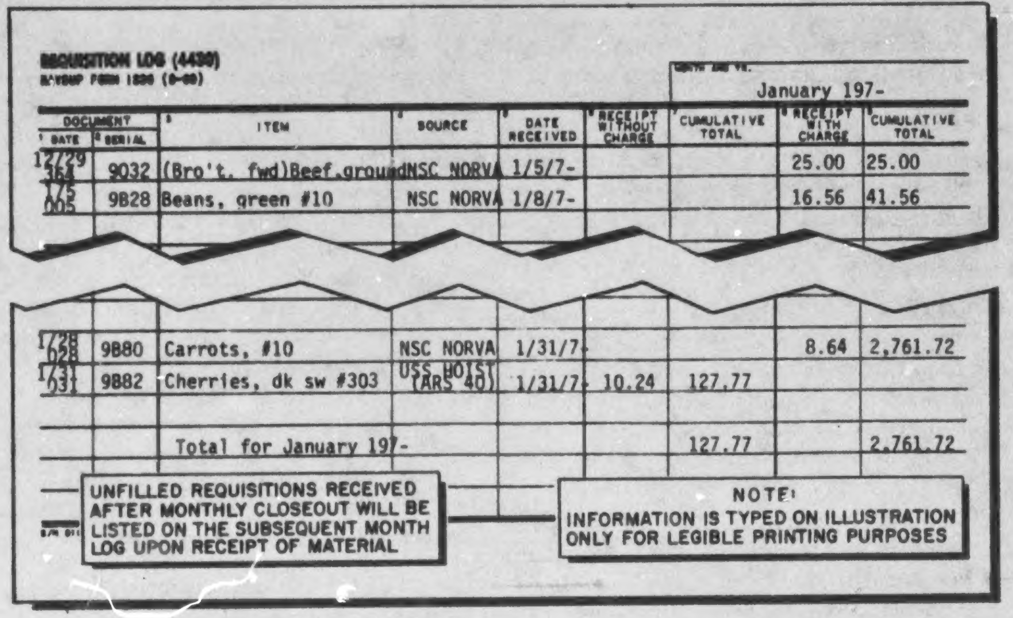
______
SIGNATURE

REQUISITION CONTROL RECORD

CODE
NOMENCLATURE
U/I
QUANTITY
UNIT PRICE
VALUE
MEAT, POULTRY AND FISH
FRUITS AND VEGETABLES—Continued
B60
240
9344
AOA
3891521573947
244
ON
SEND TO:
REQUISITION IS FROM:
DOCUMENT NUMBER
STOCK NUMBER
STATUS DATA
9344
240

48.29-1

Figure 4-2.—Subsistence Report (Multi Use) (Nonperishable), NAVSUP 1059-1 used with prepunched DD Form 1348m.



REQUISITION LOG (4430)
NAVSUP FORM 1336 (8-69)

MONTH AND YR.
January 197-

DOCUMENT		ITEM	SOURCE	DATE RECEIVED	RECEIPT WITHOUT CHARGE	CUMULATIVE TOTAL	RECEIPT WITH CHARGE	CUMULATIVE TOTAL
DATE	SERIAL							
12/29 364	9032	(Bro't. fwd)Beef,ground	NSC NORVA	1/5/7-			25.00	25.00
1/5 005	9B28	Beans, green #10	NSC NORVA	1/8/7-			16.56	41.56
1/28 028	9B80	Carrots, #10	NSC NORVA	1/31/7-			8.64	2,761.72
1/31 031	9B82	Cherries, dk sw #303	USS HOIST (ARS 40)	1/31/7-	10.24	127.77		
		Total for January 197-				127.77		2,761.72

UNFILLED REQUISITIONS RECEIVED AFTER MONTHLY CLOSEOUT WILL BE LISTED ON THE SUBSEQUENT MONTH LOG UPON RECEIPT OF MATERIAL

NOTE: INFORMATION IS TYPED ON ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES

48.107

Figure 4-3.—Requisition Log (NavSup Form 1336).

determine whether the items meet all requirements of fitness for human consumption.

When there is doubt as to the fitness of any item issued for use in the dining facility, a medical representative should be called in to determine the condition. In the event a medical representative is not available and you have doubts as to the fitness of the item, do not use it.

SEAFOOD PRODUCTS

Seafood must be inspected carefully, because it will deteriorate faster than any other type of food. Most fish used by the Navy is purchased through Supply Centers, but you must still inspect it carefully just before it is prepared to be sure it hasn't deteriorated. Do not use fish that has been thawed and frozen again. Refrozen fish will have a soft, flabby flesh, a sour odor, and may be off-color. The paper in which it is wrapped will be quite moist, slimy, and may even be discolored. The bottom of the fish container will contain ice which has formed in the refreezing of the product.

FRESH VEGETABLES

Standard grades for vegetables were developed by the United States Department of Agriculture, and the Navy bases its inspection on those standards. When deliveries are made, inspections must be conducted to find out if specifications have been met. Because of their perishability, fresh vegetables must be handled with care. Do not pinch, squeeze, or touch them unnecessarily because bruising leads to decay and results in early spoilage. The vegetables listed below are procured for the Navy. The characteristics to look for, which indicate good quality, are listed below.

ASPARAGUS–Look for stalks which are straight, fresh appearing, crisp and tender, with compact pointed ends and with only one inch or so of tough woody base to cut off.

BEETS–Look for good, globular shape with smooth, firm flesh. Medium-sized beets are less likely to be tough than very large ones.

CABBAGE–Look for well-trimmed, solid heads that are heavy for their size and show no discolored veins.

CARROTS–Check for bright-colored carrots that are well-shaped and medium-sized and about 1 1/2 inches in diameter.

CAULIFLOWER–A jacket of bright green denotes freshness. The head should be white or creamy white, clean, and solidly formed. If the flower clusters are spread or open, the vegetable will be of poor quality.

CELERY–Quality characteristics for both the bleached and the green celery are the same. Leaf stems or stalks should be brittle enough to snap easily and of medium length and thickness. The inside of the stem should be smooth. If it feels rough or puffy to your fingers, the celery is likely to be pithy.

CORN–May be either white or yellow. The husk is a fresh green color, while the kernels are tender, milky, and sufficiently large to leave no space between the rows. Ears generally should be filled to the tips, with no rows of kernels missing.

CUCUMBERS–The best cucumbers are firm in texture and bright green in color. The older ones tend to be a deep black-green or sometimes yellow. Cucumbers of less than 7 inches in length and about 2 inches in diameter are best.

EGGPLANT–Purple eggplants should be of a clear, dark, glossy color that covers the entire surface. Heaviness and firmness of flesh are important. Choose pear-shaped eggplant from 3 to 6 inches in diameter. Decay shows up in dark brown spots. Wilted, soft, or flabby eggplant should be discarded.

ENDIVE–Curly endive is grown in bunched head with narrow, ragged-edge leaves which curl at the ends. The center of the head is a yellowish white and has a milk taste while the dark green outer leaves have a bitter taste.

ESCAROLE–Escarole is a variety of endive. The leaves are broad and do not curl at the end. The leaves should be crisp, fresh, and tender.

LETTUCE–"Iceberg" lettuce is usually purchased for the Navy. It is tightly headed lettuce, medium green on the outside with a very pale green heart. Discolored areas on the leaves indicate decay. Soft rot sometimes penetrates to the center of the head.

ONIONS–Spanish and American types of onions, both grown in the United States, are used by the Navy. Dry onions should be bright, clean, hard, well-shaped, and dark-skinned. Moisture around the neck indicates decay.

ONIONS, GREEN–Should be fresh in appearance, should have fresh green tops and medium-sized necks which are blanched for at least 2 or 3 inches from the roots, and should be young, crips, and tender. Bruised, yellow, wilted tops indicate poor quality. The condition of the tops can be ascertained by puncturing them with the thumbnail and twisting.

PARSNIPS–Young parsnips which are 1 1/2 to 2 inches in thickness and free from rust spots are the best. Withered parsnips are old, tough, and have a strong flavor.

PEPPERS–Should be well shaped, thick walled, and firm, with a uniform glossy color. A pale color and soft seeds are signs of immaturity. Sunken, blister-like spots on the surface indicate that decay may set in rather quickly.

POTATOES–Good quality white potatoes are generally clean, firm, and free from cuts, growth cracks, and other surface defects. Watch for frost-damaged potatoes which generally have a watery appearance or show a black ring near the surface when cut in half.

SWEET POTATOES–Thick, chunky, medium-sized sweet potatoes which taper toward the end are the best. Avoid those with any sign of decay, as such deterioration spreads rapidly, affecting the taste of the entire potato, even in portions not immediately adjacent to the decayed area.

RADISHES–Good quality is indicated by the root which should be smooth, crisp, and firm, never soft or spongy.

RHUBARB–Fresh, large, crisp, straight stalks of red or cherry color are best. The condition of the leaves is a reliable guide in judging the freshness of the vegetable.

RUTABAGAS–Good quality rutabagas should be smooth-skinned, firm, and heavy for their size.

SQUASH–Avoid hard rinds on the following:

Buttercup–are shaped somewhat drum-like with sides slightly tapered near the apex.

Zucchini–are cylindrical in shape with fairly square ends, skin color is moderately dark green over a background color of pale yellow.

Yellow straight-necked or crooked-necked–are very brilliant light yellow in color.

Hard tough rinds are desirable however on the following as soft rinds are apt to have a watery flesh which is flat to the taste:

Acorn–are acorn-shaped and very dull, blackish green in color with dull orange interior.

Hubbard–are oval in shape with pointed neck. Skin may be smooth or warted. Color ranges from green to orange. Medium to large size is best.

TOMATOES–Look for tomatoes that are firm, plump, fairly well formed, of good color (green out of season and bright red in season) and free from blemishes. They are one of the tenderest products and must be handled with care. Misshapen, angular, ribbed, or scarred tomatoes are of poor quality.

TURNIPS–Smooth skin, firmness, and good weight for their size are qualities to look for.

FRESH FRUITS

Inspections of fresh fruits are based upon standards of the United States Department of Agriculture. Due allowances, however, are made for differences in these grades or standards, but minimum requirements are defined for the various grades.

Generally speaking, the choice of any particular fruit is influenced by appearance and quality. However, you should consider the following factors in inspecting fruits: APPEARANCE (absence of blemishes), SIZE, and TASTE. Appearance is an indication of quality but must not be used as the sole standard in inspecting. Blemishes indicate poor quality or the beginning of decay. The larger the fruit, the more woody and coarse it usually is. Taste, however, is the best indicator of quality. Occasionally, fruits may have surface blemishes and the quality still may be high. Only by tasting can this quality be determined.

The characteristics which indicate good quality in fruits and the standards for inspecting fruits are listed below.

APPLES–The best grades of apples are firm and have good color (bright and unspotted) and a pleasant flavor. Immature apples have a poor color, lack flavor, and shrivel after storage. Tart apples are best for most purposes. Soft, mealy, or overripe apples should be avoided.

BANANAS–The color and condition of the peel are good indications of the use that should be made of bananas. When the skin is all yellow, the banana is firm enough and ripe enough to be eaten. If the peel is yellow but flecked with brown, the banana is fully ripe and should be used immediately. Fruit with a moldy skin that has turned black is of poor quality, although some bananas with a dark skin are very ripe but may still be good to eat.

CANTALOUPES–There should be no trace of a stem at the blossom end. If the netting covers the cantaloupe thickly and stands out like a whipcord, the melon is generally good. An apparent softness at the blossom end is not a sure indication of maturity, as repeated pressure from handling will produce this condition. Fully ripe cantaloupe will have a delicate aroma, while an audible rattling of the seeds in a melon, when shaken, is another sign of maturity. The skin beneath the netting usually has a yellow tinge. Too deep a yellow indicates overripeness.

CHERRIES–High quality is denoted by plumpness with a bright appearance and good color.

GRAPEFRUIT–Fine juicy grapefruits are well rounded in shape and heavy for their size. They are firm, but springy to the touch; not soft, wilted, or flabby. When grapefruits have a coarse skin or are puffy and spongy it indicates lack of juice and taste.

GRAPES–Color is a good guide to ripeness. The darker varieties should be free of a green tinge, while the white grapes should have a decided amber color. The fruit should be plump and each grape should be firmly fastened to the stem. A wet condition, or the presence of mold, indicates decay.

HONEYDEW MELON–Prime quality honeydew melons have a thick greencolored, sweet, fine-flavored flesh with a distinct, pleasant aroma. The rind has a light-yellowish color and yields slightly to pressure. Decay is generally indicated by mold or dark, sunken, watery areas.

LEMONS–The best lemons have a greenish-yellow color with a smooth, fine-textured skin, and are heavy for their size. Mold or soft spots at the end indicate decay. If too springy, they may be decayed in the center.

NECTARINES–Nectarines look and taste like small peaches except that they do not have "peach fuzz." The flesh may be red, white or yellow in color and should be plump and firm.

ORANGES–The skins of good oranges should be yellowish-orange, smooth, and fine-textured. Avoid those that have badly creased skins or a puffy spongy condition and are light in weight for their size. When you are inspecting for quality, be sure that the crate does not contain decayed fruit.

PEACHES–Quality in peaches is indicated by the general appearance and firmness of the flesh. They should be smooth skinned and well filled out. The color on the underside should be creamy white or yellow, blushed with red. Over-ripeness is indicated by a deeper reddish-brown color and softness of the fruit.

PEARS–Good quality pears are firm and shiny. Pears are packed and shipped green because they develop a fine flavor and smoother texture when ripened off the tree. They should be fully ripe if they are to be served in the raw state. If they are hard and unyielding to the touch at time of receipt, allow them to stand at ordinary room temperature until the flesh responds readily to a gentle pressure of the hand. They are then in prime condition for eating.

PINEAPPLE–Fully ripe pineapples are slightly soft to the touch, golden yellow in color, and have a "piney" aroma. Fruit that is too green may not ripen well. Overmaturity is shown by slight decay at the base or on the sides by dark, soft, watery spots.

PLUMS–Good plums should be full-colored and soft enough to yield to slight pressure. Some varieties are fully ripe when the color is yellowish-green; others are fully ripe when the color is purplish blue or black. If hard, poor in color and flavor, the fruit is immature. Overripe fruit is soft and usually leaky.

STRAWBERRIES–The quality of strawberries is indicated by the general appearance. They should be firm, plump, and bright red in color. Overripe berries are leaky, dull in color, and should not be used. Mold at the surface indicates decay.

TANGERINES–Tangerines are small, yellowish red oranges with easily removable skins and loosely adhering sections. Quality is based mainly on their weight for their size and a deep yellow or orange colored skin.

WATERMELONS–A fully ripe watermelon has a thin outer skin that peels easily when scraped with the fingernail. The fully rippened watermelon is green in color with the exception of the underside which changes from a white to a yellow tinge as the watermelon matures. The safest way to determine the quality of watermelon is by "plugging." (Plugging is the removal of a small triangular section of the rind in order to see the meat inside.)

CANNED PRODUCTS

In the event you are assigned to the inspection of canned products, such as meats, fish, poultry, vegetables, fruits, and juices, you should make an inspection of the following:

CAN SIZE–Make sure cans are the size requisitioned.

CAN LABELS–Check the information stamped on the end of each can; be sure that contents and date of pack are indicated.

CAN EXTERIOR–Examine the exterior of the can for general appearance, dents, swelling, rust, and pinholes. Dents, unless so severe as to cause leakage, do not indicate that the contents are in an unsatisfactory condition. Rust does not injure the food unless it penetrates the can. Pinholes are found only by careful inspections.

CAN INTERIOR–Remove the contents and check the inside of a sample can very carefully It may be necessary to rinse the can thoroughly and then refill with water to detect very small pinholes.

CONTENTS OF CAN–Odor and taste usually indicate the condition of food. A fading of color, a loss of flavor, and a softening of the contents of the can are due to chemical action and natural aging processes. Discoloration is another defect caused by a chemical action. It is usually found in products containing sulphur compounds such as corn, peas, and meat products.

Unsatisfactory Cans

Except for coffee and molasses, which are discussed later, foods contained in the following types of can are unsatisfactory and should be surveyed. Canned food that is abnormal in appearance or odor should never be eaten or EVEN TASTED.

PINHOLE CANS–These cans have tiny holes which have been caused by the action of the acid in the food.

SWELLS–These are also called "swellers." Both ends of this type of can bulge out and remain that way. This condition is caused by the chemical action of bacteria (microorganisms) on the food which results in the formation of a gas (hydrogen sulphide). This gas cannot escape and the pressure from the gas causes the ends of the can to bulge out.

SPRINGERS–The ends of this type of can are also bulged out; however, the ends will yield to pressure of the fingers or thumb. When the pressure is relieved, the ends bulge out again. This condition may be caused by the can being overfilled or by the chemical action of bacteria on the food which results in the formation of a gas, which causes the swelling condition.

FLIPPERS–If the cans of food have been in storage for a long period of time and the cans show signs of deterioration, they should be checked by the following method. Bring the end of the can down sharply on a flat surface. If one end is forced into a convex shape when the other end of the can is brought down sharply on a flat surface, it indicates a loss of vacuum in the can from the formation of gas by bacteria or by chemical action on the metal of the can. The contents should not be used. If you are in doubt as to the quality of the contents, consult the medical representative.

Exceptions to the above are coffee and molasses. Care must be taken not to reject cans of coffee or molasses which show swell or springer characteristics, as in these cases it does not indicate that the contents are spoiled.

If in doubt as to the quality of the products seek assistance from the medical department via your chain of command.

DRY STORES

DRY STORES are such foods as cereals, sugar, dried fruits, vegetables, flour, and meal. They must be stored in an area in which the temperature, humidity, and air circulation are controlled.

Insects can cause great damage to stored food, by attacking both natural and manufactured food. Food stored at temperatures between 60° and 90° F are especially attractive to insects.

All dry stores have previously been inspected by the United States Department of Agriculture; however, you should check the condition of the containers thoroughly upon receipt of the stores. If there are any signs of contamination, infestation, or any signs of abnormal conditions consult your medical representative.

DAIRY PRODUCTS

Dairy products spoil quickly under improper storage conditions. The method of handling and the storage temperature must be correct. It is necessary that you check them carefully upon delivery, and frequently thereafter until they are consumed.

MILK AND CREAM–Dairy products are purchased in accordance with Government standards. They are shipped in cans, or approved fiber containers. When they are delivered to you, check the containers for visible foreign matter, leaks, or containers that appear to be unsanitary, and ensure that the medical representative has inspected them. The temperature of milk delivered to naval establishments should never exceed 50° F. In hot weather, taste the milk for freshness. It is important that you make a daily check of the temperature of the boxes in which milk and cream are kept. The temperature should be close to freezing, 32° F.

BUTTER–Butter should reach you in clean, unbroken cases. The inspection stamped on the case should indicate the weight and the grade of the butter. To test for quality, it is best to taste samples for sweetness and freshness. The color should be uniform and the texture firm. No specks or foreign substances should be present.

CHEESE–Check the rind, color, flavor, and texture of cheese. It may be delivered to you in either natural or processed form. The rind should be clean, and free from molds or wrinkles. The color should be evenly distributed through good cheddar cheese. You can check this by holding a thin slice of cheese in front of a light. The flavor of good cheese is clean and "nutty" and the texture compact and solid. There should be no breaks or holes in the surface of the cheese.

EGGS–Fresh, frozen, and dehydrated eggs are procured for use in the Navy dining facilities. When eggs meet the Navy specifications, the containers are marked at the time of delivery by the inspector to show their grade and the date of inspection.

Fresh eggs should be stored in a cool (32° F.), dry, ventilated place. Eggs should not be stored near strong-flavored foods because the porous egg shells absorb odors.

Frozen eggs procured by the Navy include whole table type, whole bakery type, and egg whites. Whole table eggs are pasteurized and are procured specifically for use in the preparation of scrambled eggs or omelets. Whole bakery eggs are frozen from a mixture containing normal proportions of white and yolk. These eggs are not pasteurized and are not safe for use in omelets or scrambled eggs.

Dehydrated egg mix has many advantages over fresh shell eggs. These processed eggs occupy less space, effect a considerable savings in weight, and are ready for instant use without laborious inspection and separation from the shell.

RECEIPT

Deliveries can usually be anticipated because of shipment notices, delivery dates on requisition or other notifications, and preparations should be made to receive the material. Receiving personnel should be ready to inspect the material, storerooms should be ready to receive the material, and the necessary working party should be notified.

The material should be checked against the delivery document, and the quantity received should be indicated by the food service officer on the delivery document. Deliveries by commercial suppliers are normally accompanied by the dealer's delivery document. Since the dealer's invoice will be based on this delivery document, it must be carefully checked against the material received and against the delivery order to ensure that no errors have been made. The food service officer signs the quantity certification and the medical representative signs the quality certification on the Order and Inspection Report (NAVSUP Form 48) as shown in Figure 4-4.

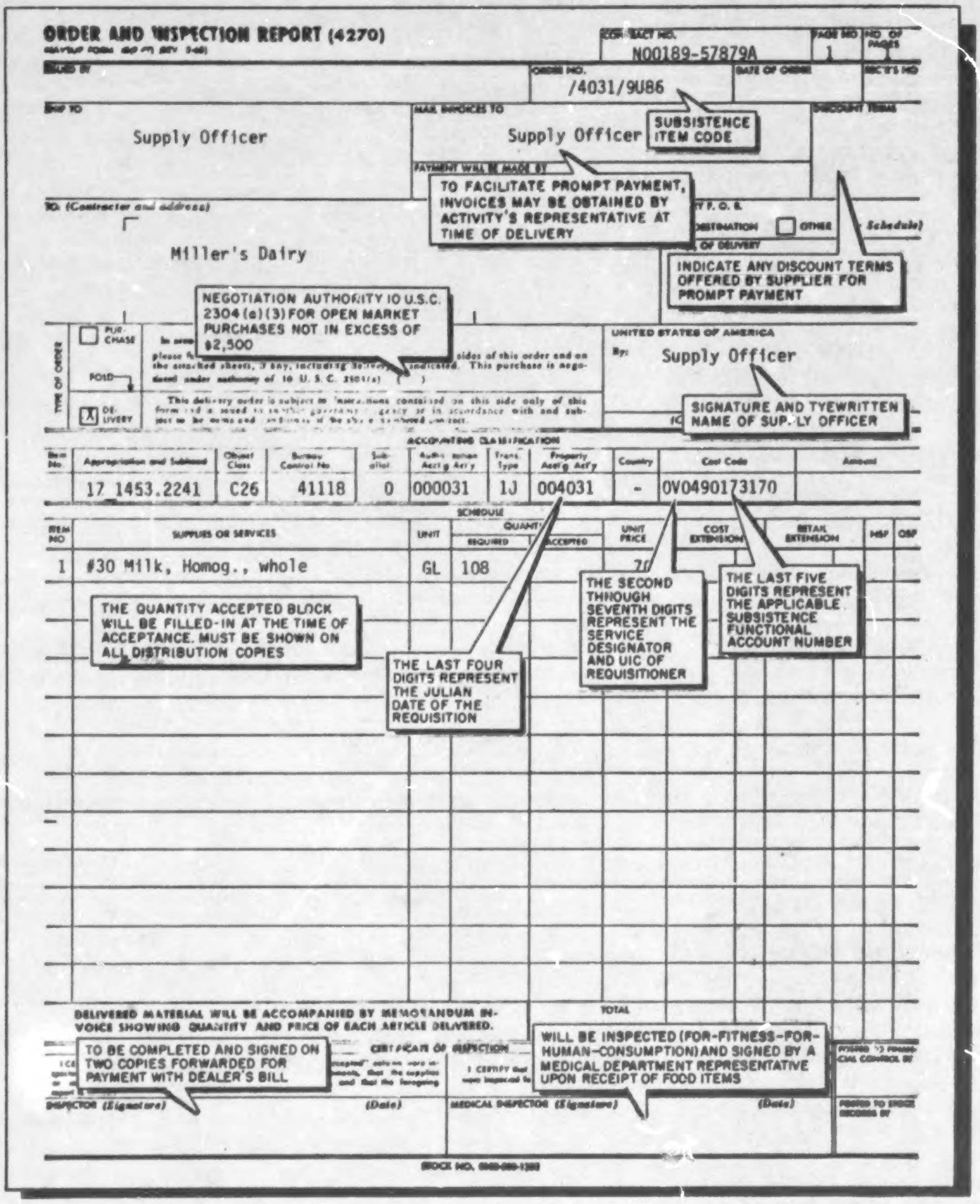
The certified NAVSUP Form 48 is kept under lock by the food service officer until the dealer's invoice has been submitted to NRFC for payment. Deliveries by supply activities are documented by DD Form 1348-1 for semiperishable, and NAVSUP Form 1059 or DD Form 1149 for perishable items. The requisition worksheet, NAVSUP Form 1059-1, which you used in preparing the requisition, may be used in checking receipts of subsistence items if you find it more convenient than using the copies of the DD Form 1348-1.

The custodian in charge of the storeroom acknowledges receipt of the subsistence items on a copy of the delivery document which is then retained by the food service officer until the next inventory reestablishes custody.

POSTING RECEIPTS

Receipts are posted to the following records:

- Record of Receipts and Expenditures NAVSUP Form 367
- Subsistence Ledger, NAVSUP Form 335
- Stock Tally Card, NAVSUP Form 209
- Requisition Log, NAVSUP Form 1336



ORDER AND INSPECTION REPORT (4270)

CONTRACT NO. N00189-57879A

PAGE NO. 1

ORDER NO. /4031/9U86

SUBSISTENCE ITEM CODE

SHIP TO Supply Officer

MAIL INVOICES TO Supply Officer

PAYMENT WILL BE MADE BY

TO FACILITATE PROMPT PAYMENT, INVOICES MAY BE OBTAINED BY ACTIVITY'S REPRESENTATIVE AT TIME OF DELIVERY

TO: (Contractor and address)

Miller's Dairy

DISCOUNT TERMS

INDICATE ANY DISCOUNT TERMS OFFERED BY SUPPLIER FOR PROMPT PAYMENT

TYPE OF ORDER

☐ PURCHASE

NEGOTIATION AUTHORITY 10 U.S.C. 2304 (a)(3) FOR OPEN MARKET PURCHASES NOT IN EXCESS OF $2,500

... sides of this order and on the attached sheets, if any, including delivery as indicated. This purchase is negotiated under authority of 10 U. S. C. 2304(a) ( )

☒ DELIVERY

This delivery order is subject to instructions contained on this side only of this form and is issued to another government agency or in accordance with and subject to the terms and conditions of the above numbered contract.

UNITED STATES OF AMERICA

By: Supply Officer

SIGNATURE AND TYEWRITTEN NAME OF SUPPLY OFFICER

ACCOUNTING CLASSIFICATION

Item No.	Appropriation and Subhead	Object Class	Bureau Control No.	Sub-allot	Authorization Acct'g Act'y	Trans. Type	Property Acct'g Act'y	Country	Cost Code	Amount
	17 1453.2241	C26	41118	0	000031	1J	004031	-	0V0490173170	

THE LAST FOUR DIGITS REPRESENT THE JULIAN DATE OF THE REQUISITION

THE SECOND THROUGH SEVENTH DIGITS REPRESENT THE SERVICE DESIGNATOR AND UIC OF REQUISITIONER

THE LAST FIVE DIGITS REPRESENT THE APPLICABLE SUBSISTENCE FUNCTIONAL ACCOUNT NUMBER

SCHEDULE

ITEM NO	SUPPLIES OR SERVICES	UNIT	QUANTITY REQUIRED	QUANTITY ACCEPTED	UNIT PRICE	COST EXTENSION	RETAIL EXTENSION	MSF	OSF
1	#30 Milk, Homog., whole	GL	108		70				

THE QUANTITY ACCEPTED BLOCK WILL BE FILLED-IN AT THE TIME OF ACCEPTANCE. MUST BE SHOWN ON ALL DISTRIBUTION COPIES

DELIVERED MATERIAL WILL BE ACCOMPANIED BY MEMORANDUM INVOICE SHOWING QUANTITY AND PRICE OF EACH ARTICLE DELIVERED.

TOTAL

CERTIFICATE OF INSPECTION

TO BE COMPLETED AND SIGNED ON TWO COPIES FORWARDED FOR PAYMENT WITH DEALER'S BILL

INSPECTOR (Signature) (Date)

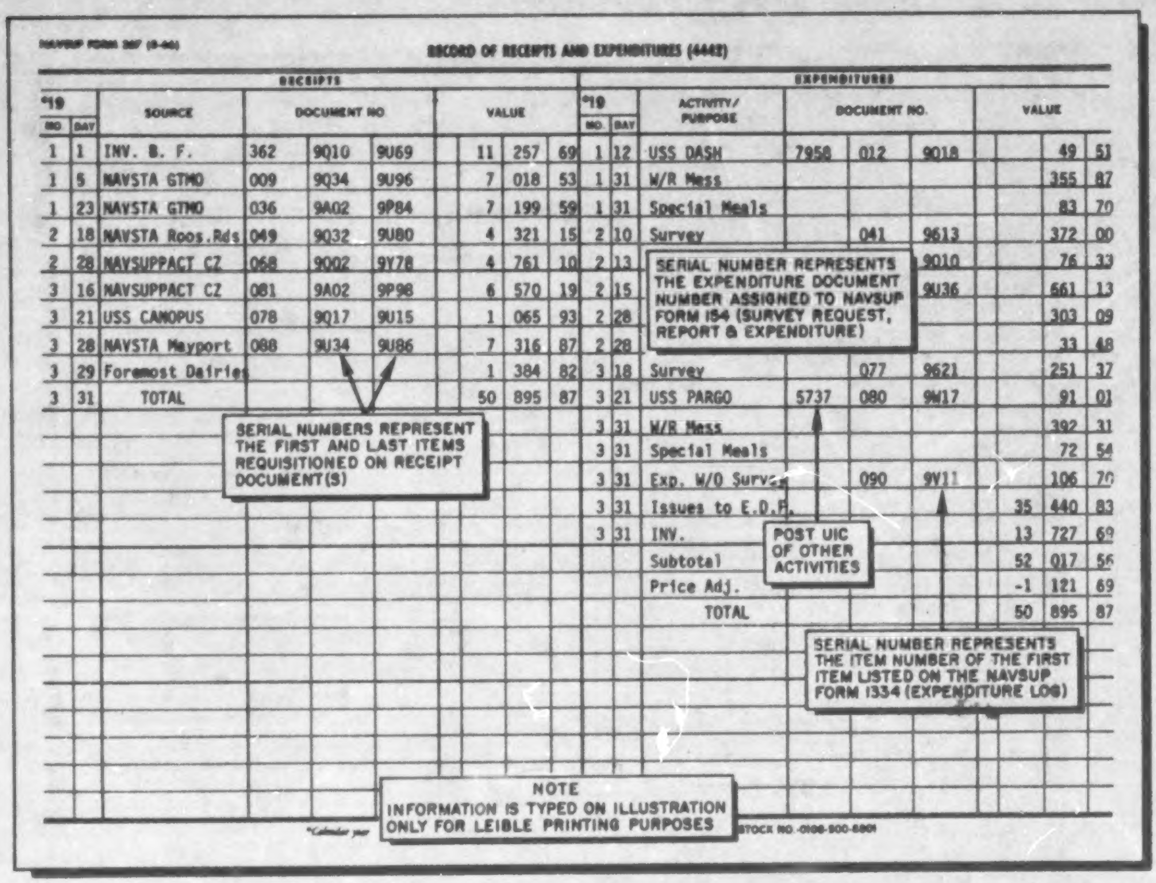
WILL BE INSPECTED (FOR-FITNESS-FOR-HUMAN-CONSUMPTION) AND SIGNED BY A MEDICAL DEPARTMENT REPRESENTATIVE UPON RECEIPT OF FOOD ITEMS

MEDICAL INSPECTOR (Signature) (Date)

POSTED TO STOCK RECORDS BY

43.23

Figure 4-4.—Order and Inspection Report (NAVSUP Form 48).



NAVSUP FORM 367 ([illegible])

RECORD OF RECEIPTS AND EXPENDITURES (4442)

RECEIPTS										EXPENDITURES									
*19		SOURCE	DOCUMENT NO			VALUE				*19		ACTIVITY/ PURPOSE	DOCUMENT NO.			VALUE			
MO	DAY									MO.	DAY								
1	1	INV. B. F.	362	9Q10	9U69		11	257	69	1	12	USS DASH	7958	012	9Q18			49	51
1	5	NAVSTA GTMO	009	9Q34	9U96		7	018	53	1	31	W/R Mess						355	87
1	23	NAVSTA GTMO	036	9A02	9P84		7	199	59	1	31	Special Meals						83	70
2	18	NAVSTA Roos.Rds	049	9Q32	9U80		4	321	15	2	10	Survey		041	9613			372	00
2	28	NAVSUPPACT CZ	068	9Q02	9Y78		4	761	10	2	13				9Q10			76	33
3	16	NAVSUPPACT CZ	081	9A02	9P98		6	570	19	2	15				9U36			661	13
3	21	USS CANOPUS	078	9Q17	9U15		1	065	93	2	28							303	09
3	28	NAVSTA Mayport	088	9U34	9U86		7	316	87	2	28							33	48
3	29	Foremost Dairies					1	384	82	3	18	Survey		077	9621			251	37
3	31	TOTAL					50	895	87	3	21	USS PARGO	5737	080	9W17			91	01
										3	31	W/R Mess						392	31
										3	31	Special Meals						72	54
										3	31	Exp. W/O Survey		090	9V11			106	70
										3	31	Issues to E.D.F.					35	440	83
										3	31	INV.					13	727	69
												Subtotal					52	017	56
												Price Adj.					-1	121	69
												TOTAL					50	895	87

*Calendar year

STOCK NO. [illegible]

SERIAL NUMBERS REPRESENT THE FIRST AND LAST ITEMS REQUISITIONED ON RECEIPT DOCUMENT(S)

SERIAL NUMBER REPRESENTS THE EXPENDITURE DOCUMENT NUMBER ASSIGNED TO NAVSUP FORM 154 (SURVEY REQUEST, REPORT & EXPENDITURE)

POST UIC OF OTHER ACTIVITIES

SERIAL NUMBER REPRESENTS THE ITEM NUMBER OF THE FIRST ITEM LISTED ON THE NAVSUP FORM 1334 (EXPENDITURE LOG)

NOTE
INFORMATION IS TYPED ON ILLUSTRATION ONLY FOR LEIBLE PRINTING PURPOSES

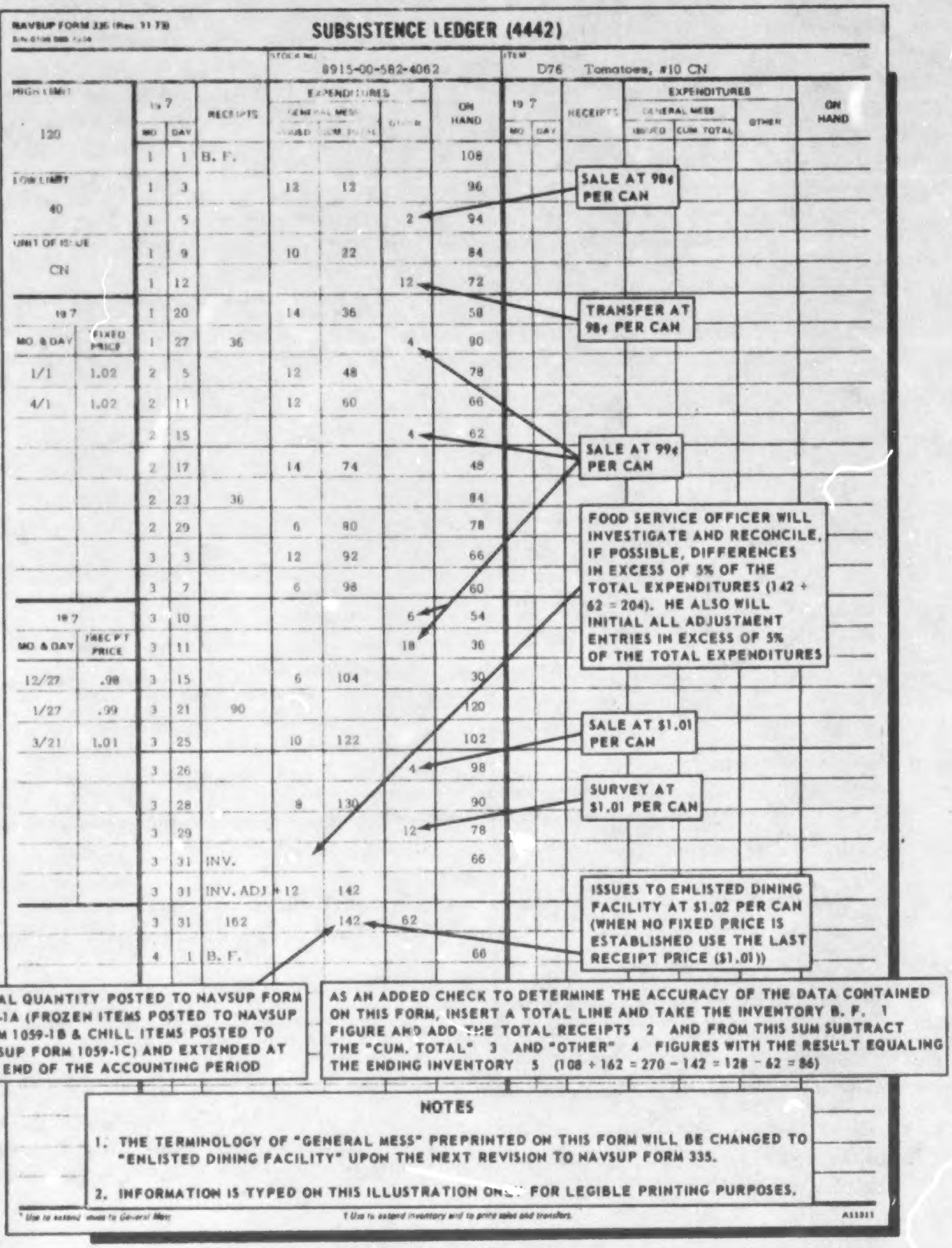
10.62

Figure 4-5.—Record of Receipts and Expenditures (NavSup Form 367).

The total value of each receipt document is posted to the Record of Receipts and Expenditures, NAVSUP Form 367 (Figure 4-5). The first entry is always the inventory value carried forward from the previous quarter. When materials on several requisitions, from the same issuing activity, are delivered on the same day, they may be batch posted. The document numbers should be indicated, and the total value of all documents posted. If you use the batch posting method, you must be particularly careful that the value posted is correct, since it could be very difficult to locate an error when closing out the records at the end of the quarter.

Each receipt document is then posted to the applicable page of the Subsistence Ledger, NAVSUP Form 335. A separate page of the NAVSUP Form 335 is prepared for each item carried in stock (Figure 4-6).

One difference you will notice is the unit price. Unlike other stock items, subsistence items have two unit prices—the fixed price and the last receipt price. Since the purchase price for subsistence items on the commercial market fluctuates and the enlisted dining facility must operate on a fixed ration allowance, the Navy Food Service System Office establishes a fixed price for all items which are used in the dining



NAVSUP FORM 335 (Rev. 11-73)
S/N 0106-[illegible]

SUBSISTENCE LEDGER (4442)

STOCK NO. 8915-00-582-4062
ITEM D76 Tomatoes, #10 CN

HIGH LIMIT 120
LOW LIMIT 40
UNIT OF ISSUE CN

19 7 MO. & DAY	*FIXED PRICE
1/1	1.02
4/1	1.02

19 7 MO. & DAY	†RECEIPT PRICE
12/27	.98
1/27	.99
3/21	1.01

19 7 MO	DAY	RECEIPTS	EXPENDITURES GENERAL MESS ISSUED	CUM TOTAL	OTHER	ON HAND
1	1	B. F.				108
1	3		12	12		96
1	5				2	94
1	9		10	22		84
1	12				12	72
1	20		14	36		58
1	27	36			4	90
2	5		12	48		78
2	11		12	60		66
2	15				4	62
2	17		14	74		48
2	23	36				84
2	29		6	80		78
3	3		12	92		66
3	7		6	98		60
3	10				6	54
3	11				18	36
3	15		6	104		30
3	21	90				120
3	25		10	122		102
3	26				4	98
3	28		8	130		90
3	29				12	78
3	31	INV.				66
3	31	INV. ADJ	+12	142		
3	31	162		142	62	
4	1	B. F.				66

SALE AT 98¢ PER CAN

TRANSFER AT 98¢ PER CAN

SALE AT 99¢ PER CAN

FOOD SERVICE OFFICER WILL INVESTIGATE AND RECONCILE, IF POSSIBLE, DIFFERENCES IN EXCESS OF 5% OF THE TOTAL EXPENDITURES (142 + 62 = 204). HE ALSO WILL INITIAL ALL ADJUSTMENT ENTRIES IN EXCESS OF 5% OF THE TOTAL EXPENDITURES

SALE AT $1.01 PER CAN

SURVEY AT $1.01 PER CAN

ISSUES TO ENLISTED DINING FACILITY AT $1.02 PER CAN (WHEN NO FIXED PRICE IS ESTABLISHED USE THE LAST RECEIPT PRICE ($1.01))

TOTAL QUANTITY POSTED TO NAVSUP FORM 1059-1A (FROZEN ITEMS POSTED TO NAVSUP FORM 1059-1B & CHILL ITEMS POSTED TO NAVSUP FORM 1059-1C) AND EXTENDED AT THE END OF THE ACCOUNTING PERIOD

AS AN ADDED CHECK TO DETERMINE THE ACCURACY OF THE DATA CONTAINED ON THIS FORM, INSERT A TOTAL LINE AND TAKE THE INVENTORY B. F. 1 FIGURE AND ADD THE TOTAL RECEIPTS 2 AND FROM THIS SUM SUBTRACT THE "CUM. TOTAL" 3 AND "OTHER" 4 FIGURES WITH THE RESULT EQUALING THE ENDING INVENTORY 5 (108 + 162 = 270 − 142 = 128 − 62 = 86)

NOTES

1. THE TERMINOLOGY OF "GENERAL MESS" PREPRINTED ON THIS FORM WILL BE CHANGED TO "ENLISTED DINING FACILITY" UPON THE NEXT REVISION TO NAVSUP FORM 335.

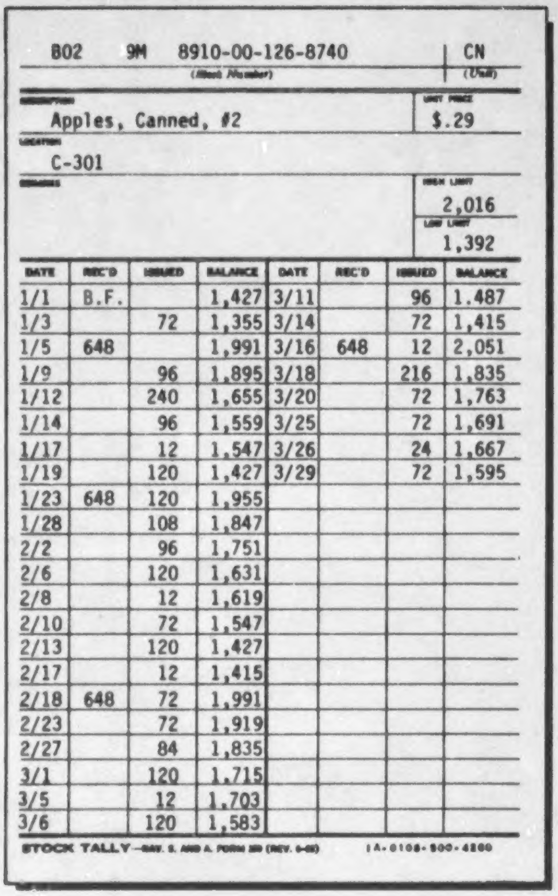
2. INFORMATION IS TYPED ON THIS ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES.

* Use to extend issues to General Mess
† Use to extend inventory and to price sales and transfers.
A11311

10.61

Figure 4-6.—Subsistence Ledger Sheet (NavSup Form 335).

facility. Thus the same charge is made for an item throughout the accounting period regardless of the current market or receipt price. The receipt price for each receipt is entered in the space provided along with the date of receipt since this price is used to survey, transfer, or sell items to private dining facilities and to extend the inventory value.



B02 9M 8910-00-126-8740 | CN
(Stock Number) | (Unit)

DESCRIPTION: Apples, Canned, #2
UNIT PRICE: $.29
LOCATION: C-301
REMARKS:
HIGH LIMIT: 2,016
LOW LIMIT: 1,392

DATE	REC'D	ISSUED	BALANCE	DATE	REC'D	ISSUED	BALANCE
1/1	B.F.		1,427	3/11		96	1.487
1/3		72	1,355	3/14		72	1,415
1/5	648		1,991	3/16	648	12	2,051
1/9		96	1,895	3/18		216	1,835
1/12		240	1,655	3/20		72	1,763
1/14		96	1,559	3/25		72	1,691
1/17		12	1,547	3/26		24	1,667
1/19		120	1,427	3/29		72	1,595
1/23	648	120	1,955				
1/28		108	1,847				
2/2		96	1,751				
2/6		120	1,631				
2/8		12	1,619				
2/10		72	1,547				
2/13		120	1,427				
2/17		12	1,415				
2/18	648	72	1,991				
2/23		72	1,919				
2/27		84	1,835				
3/1		120	1,715				
3/5		12	1,703				
3/6		120	1,583				

STOCK TALLY—NAV. S. AND A. FORM 209 (REV. [illegible]) 1A-0108-500-4200

NOTE:
INFORMATION IS TYPED ON ILLUSTRATION
ONLY FOR LEGIBLE PRINTING PURPOSES

48.108

Figure 4-7.—Stock Tally Card (NavSup Form 209).

The Stock Tally Card, NAVSUP Form 209, is posted by the storeroom custodian who receives the material. The use of these cards is very important and is strongly recommended. The storeroom custodian can spot check himself against mistakes and errors in stock, (Figure 4-7).

DISTRIBUTION OF RECEIPT DOCUMENTS

One copy of each receipt document should be placed in the completed requisition or purchase order file. The copy on which the storeroom custodian acknowledged custody is retained by the food service officer until after an inventory has been taken and custody reestablished. The remaining copies should be placed in a receipts file for use in preparing the returns.

FOOD STOWAGE

Stowage of subsistence items is important because the conservation of foods and their accessability for use are both dependent to a great extent on proper stowage procedures. Correct stowage is also an important aspect of the sanitary and safety precautions that are necessary to prevent foodborne illness and personal injury.

BASIC PRINCIPLES

Certain basic stowage principles must be observed regardless of the type of items.

Safety

Materials must be stowed so as to prevent injury to the ship and the crew and to prevent damage to the material itself. Articles stowed overhead and on top of bins must be secured with particular care because the lashing or other means of securing may be subjected to heavy strain while the ship is underway.

Accessibility

Supplies must be arranged in stowage so as to facilitate breakouts. Articles that are issued most frequently should be located nearest to the breakout area. Whenever practicable, avoid stowing an item on top of or behind a different kind of material. Failure to observe this rule causes slow breakouts and slow and inaccurate inventories. Items must be stored so that, under ordinary conditions, the oldest stock will be the first issued.

Orderliness

Case goods should be stowed neatly in the storage area so that they can be counted by sight without being moved.

Safety, accessibility and orderliness are closely interrelated and must be considered together. For instance, if, for the sake of accessibility, you leave cases of canned goods stacked in the passageway, or if you do not secure them properly, you will violate rules of safety and orderliness. If such a practice were carried to an extreme, you would eventually have such confusion that accessibility would suffer also.

SEMIPERISHABLE SUBSISTENCE

The term "semiperishable subsistence" refers to food items that are canned, dried, dehydrated, or otherwise processed to the extent that such items may, under normal conditions, be stored in a nonrefrigerated space. While semiperishable subsistence is not nearly so prone to spoilage as perishable subsistence, spoilage can and will occur if the items are mishandled, improperly stored, or stored too long. Always remember the length of storage should be based on the packing date of the product and not the date of receipt.

Stowage Principles

When possible, store semiperishable subsistence items in clean, cool, dry, well-ventilated storerooms. Check all items at regular intervals for signs of damage. Keep your storerooms clean to prevent the contamination of bagged foods by dirt and dust.

Segregate and clearly mark shipments so that the oldest lots–as packed, not as received–are issued first. However, if newer lots show signs of deterioration or spoilage, they should be issued first.

Methods of storage depend on the size and the contents of the container, and the bursting or breaking strength of the bottom layers. Care must be taken not to stack items too high because of the danger of bursting or crushing the bottom layers.

Do not stack items near steam or other heated pipes. Use pallets or deck grating to raise the items off the deck and stack individual lots so as to permit proper circulation of air and facilitate cleaning.

Bagged items and those requiring insect control should not be stored in large lots in corners of the storeroom or directly against the bulkhead. This type of storage will not permit sufficient room for cleaning and inspecting. Whenever practicable, palletized storage should be used to ease the handling of the stores and reduce losses through breakage in handling.

The safe storage period for dry subsistence items varies greatly, depending on such elements as temperature, humidity, care in handling, protection from the weather, quality of the food when received, and the packing. Subsistence that has been on hand beyond the safe storage limit should be inspected for spoilage, leakage, or other damage. If such items are in good condition, use them as promptly as practicable. Survey all items unfit for human consumption in accordance with NAVSUP P-486, Chapter 6.

Rotation of Semiperishable Food Items

Refer to NAVSUP P-486, Chapter 5, for detailed information in regard to the rotation of semiperishable food items. Study this table carefully. It is not practical to memorize it, but by careful study you will develop general ideas about the keeping times of the various foods and the changes that indicate a food item has been kept too long. The keeping times shown are average keeping times for products stored at 70° F. The 70° F temperature is representative of average temperatures at most Navy stock points. Keeping times will be reduced by approximately 50% if storage temperatures are maintained at 90° F and will be increased by approximately 100% by extended storage at 40° F.

Causes Of Spoilage

Age, bacteria, yeasts, molds, insects, rodents, and environmental factors contribute to the deterioration of all foodstuffs.

Age is one of the contributing factors in food spoilage. Therefore, to prevent spoilage due to age you should always observe the basic principle of storage, which is—the oldest lots of the item should always be used first except when the condition of the newer item is such that it must be given priority.

Bacteria, yeasts, and molds are the primary causes of food spoilage. Canned foods may be spoiled by bacteria which have survived the canning process or by bacteria which have gained access to the can through imperfections in or damage to the containers. Spoilage is evidenced by the development of gas and in most cases by a foul odor or bad taste. Yeast growth creates damage, particularly at temperatures between 77° and 95° F, to products with a sugar content, such as honey, syrup, dried fruits, sweet beverages, fruit concentrates, and canned fruits.

Molds produce visible threadlike filaments, musty odors, and off-flavors in the product in which they are growing. Surface molds on firm textured foods such as meats and meat products are not necessarily harmful.

Insects can, and do, cause great damage to stored food, attacking both natural and manufactured food. Roaches and flies not only contaminate the foods but may spread disease. Foods stored at temperatures between 60° and 90° F are especially attractive to insects. As soon as insect infestation is discovered in food items, they should be segregated to prevent the insects from spreading to other items. If they are not too heavily infested, they may be reconditioned for use after obtaining medical department approval. Use insect repellents carefully so as not to contaminate the food or cause damage by absorption of the fumigant or insecticide flavor into the food.

Rodents (rats and mice) not only physically destroy food by feeding, chewing, and cutting the bags for nests or nesting material, but also contaminate food with their excreta and hairs. They are carriers of filth and disease. The most effective method of control is to prevent the entry of these animals into the storerooms.

Physical environmental factors that contribute to the spoilage of dry subsistence include freezing temperatures, heat, moisture, lack of ventilation, and exposure to light. Dry products such as grains, flour, sugar, starch, cereals, and dehydrated foods ordinarily are not injured by freezing. If canned foods containing large amounts of water are frozen, the usefulness and taste of the products will not be harmed; however, the physical appearance may be affected. Emulsions such as canned cheese and butter, prepared mustard, and mayonnaise will separate and appear unpalatable, although the food is not spoiled.

A high storage temperature over long periods of time is very detrimental to most food products. It encourages bacterial growth, mold growth, and insect infestation. Flour and associated products (barley, cereals, corn meal, cornstarch, crackers and biscuits, hominy, noddles, oats, rice, spaghetti and macaroni, tapioca, and uncooked wheat) are made more subject to insect infestation by heat. These items also readily absorb distinctive odors. Moisture hastens the growth of insects, bacteria, and molds, and sometimes causes mustiness in flour, rice, and similar foods. Check your dried vegetables and fruits at frequent intervals to determine if this condition exists. Store any items that are not sealed in metal containers away from moisture and odor producing materials.

Dehydrated products are subject to moisture absorption, insect infestation, and mold. Loss of flavor and discoloration (darkening) will occur with age; this action is progressive, and is hastened by high temperature.

Improper ventilation and too much light can also add to the deterioration of foods. High humidity, and the lack of proper ventilation may cause very high temperatures in storerooms. Therefore, proper ventilation is one of the most important factors in protecting foods, particularly in tropical areas.

Damage from light is restricted to products that are packed in glass or other transparent containers. Exposure to light causes color changes and may affect the flavor of foods containing, or composed of, oils and fats.

PERISHABLE FOODS

All foods are perishable. The term perishable as applied here refers to food items requiring refrigeration and special handling.

All fresh and frozen food items are highly perishable and subject to rapid deterioration when improperly stored. They require accurate temperatures, controlled humidity, air circulation, and special care in keeping the storage space sanitary. Failure to maintain any one of these conditions will result in rapid spoilage and eventual loss. Most spoilage in fresh and frozen subsistence is caused by bacteria and fungi and spreads rapidly from the decayed items to the sound food items.

You may be assigned as the MS in charge of the cold storage area. When such is the case, your duties regarding storage and care of fresh and frozen subsistence items are as follows:

- Make frequent inspections, sort, and remove any decayed items or portions. This will keep losses and surveys to a minimum.

- Segregate and mark shipments to make clear their relative ages. This will facilitate the issue of the oldest food being issued first unless there is some reason (the condition of a newer lot) for giving the newer lot priority.

- Inspect food items to ensure that DOD requirements are met. In the event frozen stores are received in a thawed or partially thawed condition, seek medical advice and refer to NavSup P-486, Chap. VI for survey procedures.

Fresh Fruit and Vegetables

Raise the containers off the deck with pallets or gratings and provide space between stacks to permit the circulation of air. In some cases it may be necessary to use a fan to maintain adequate circulation of all parts of the storeroom.

- SAFETY PRECAUTION: When fresh fruits and vegetables are stored in a tight compartment at temperatures of 40° F or higher, the concentration of the carbon dioxide produced by respiration may reach a level in which it is unsafe to work. One way to check the amount of carbon dioxide present in a room is to light a match or candle. If the light is extinguished, do not work in the space until fresh air has been introduced.

Meat and Meat Products

Proper circulation of air is of prime importance in keeping the desired temperature in all parts of the meat storage space. Do not stack cases directly on the deck; use pallets or deck gratings to allow free circulation of air under all items stored in the space. Stacks should be at least 4 inches from the wall or refrigeration coils. Generally, when the recommended temperature in all parts of the refrigerated space is uniform within the stacks, the circulation of air in the space is considered adequate.

Dairy Products and Eggs

Keep the cold storage room for dairy products and eggs fresh by keeping it clean and by circulating the air slowly. Air circulation can be facilitated by the use of pallets or deck gratings and by the proper stacking of the various lots.

Frozen Fruits and Vegetables

Frozen fruits and vegetables are highly perishable unless properly stored. Upon delivery, they must be transferred promptly to a low temperature storage space. Check the temperature of the load upon arrival, by taking temperature readings of cartons selected from top layers inside of shipping cases.

When the temperature is found to be higher than that of the freezer room, scatter the shipping cases loosely about the room on hand trucks or on the deck with adequate space between individual cases to permit rapid lowering of the product temperature to freezer room temperature. Use of a portable fan to create an air current over the item will speed up temperature equilization. When the temperature of the item has been lowered sufficiently, stack the cases compactly at once. Stack from the bulkhead toward the center of the room, starting about 4 inches from the bulkhead or bulkhead coils. Stack the cases on pallets to permit the circulation of air under them. The use of pallets will also improve the sanitary conditions. In rooms where cold air is expelled directly from blower units at the ends of the rooms, the cases should be stacked low enough to permit air circulation. Allow at least 2 feet between the top of the stack and the overhead or air ducts.

Storage Life of Frozen Perishable Foods

The storage temperature of all frozen perishable food items should not exceed 0° F. Refer to NAVSUP P-486, Chapter V for the approximate storage life of frozen items under ideal conditions.

REFRIGERATION COILS AND UNITS

Three factors affect the rate at which frost and ice accumulate on refrigerator coils: (1) door traffic; (2) excessive temperature difference between the coils and the box; and (3) moisture from the stowed materials. In each case the build-up can be reduced by properly planned and executed break-out procedures. Measures discussed in the following paragraphs may be used to prevent excessive icing of coils.

DOOR TRAFFIC

Breakouts should be planned for a full day's requirements. All dining facilities should draw their frozen subsistence items at a predetermined time, usually in the morning. Any items withdrawn at this single daily breakout from the freeze box, if not intended for immediate use, should be stowed temporarily in the chill box.

This "one breakout" per day should be strictly enforced. With a little planning on the part of the various dining facilities, it should not be too difficult. In this way, the reefer temperature will remain constant and excessive icing from too much door traffic will be kept to a minimum.

TEMPERATURE CONTROLS

A difference in the temperature of the refrigerated spaces and the refrigeration coils will cause vapor to form on the coils and the refrigeration coils turn the vapor into ice. This ice formation continues until the temperatures of the coils and the refrigerated spaces equalize.

The temperatures of the coils and the refrigerated spaces are likely to differ most during the period when the freeze box is being restowed. The higher temperature of the subsistence items being stowed will cause a rise in temperature in the refrigerated space and produce vapors. There is no way to prevent this condition, since the work of stowing must go on. However, once the stowage has been completed, the box should remain closed until the normal temperature level of the freeze box has been reached.

AIR-CIRCULATION

Proper stowage and adequate air circulation help prevent excessive ice formation. Continuous circulation by electric blowers is necessary at all times. Stowage arrangements should allow free circulation of air throughout the box.

Adequate aisles and overhead space should be provided in order to permit the free circulation of air from the blowers. Blowers should be inspected each day to ensure proper operation. Any malfunction in the circulating unit should be reported immediately.

DEFROSTING REFRIGERATORS

The refrigeration coils and units in cold storage spaces should be defrosted as often as practicable. A layer of frost or ice one inch or more in thickness will reduce the efficiency of the refrigeration system and may result in overloading the compressors. The NAVSHIPS Technical Manual recommends defrosting before the average frost thickness reaches 3/16 of an inch in the average cold storage refrigeration plant installation. Always consult the engineering officer regarding the defrosting of the refrigeration systems.

Some refrigeration units are so equipped that hot gas can be run through the cooling coil to melt the ice. Then the bulkheads, the overhead, and the deck remain cold because of the speed with which the coils are defrosted and there is no necessity for moving the food. This method of defrosting should be employed on all ships equipped with such a unit, since refrigeration is not interrupted. Check with the ship's engineering officer to see if your cold storage plant is of this type. If your unit is not of this type it will be necessary to resort to other methods of defrosting. Consult the engineering officer. Never use an ice pick or sharp tool to pick ice from the coils.

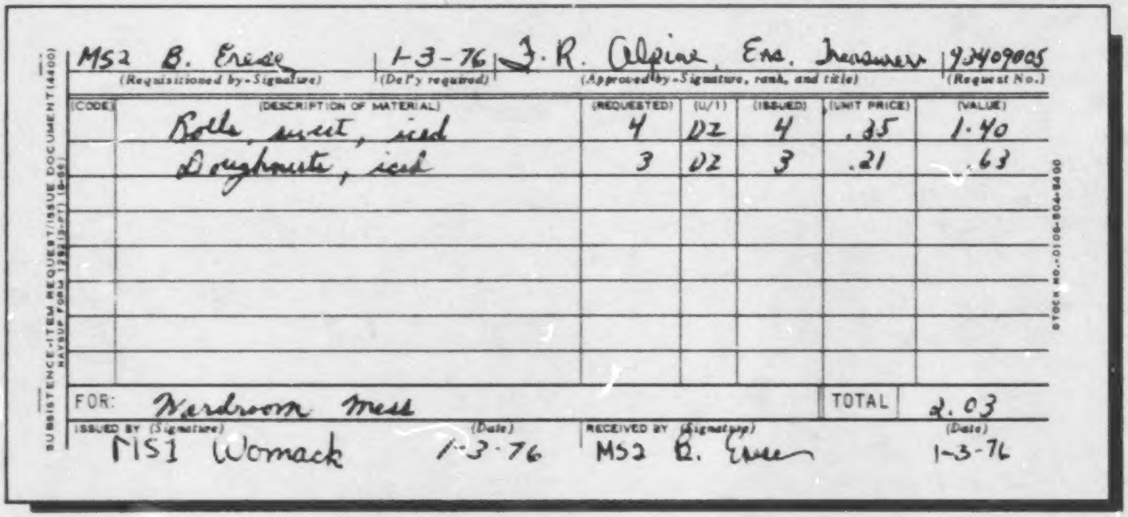
Once defrosting is completed, scrub and wash the box thoroughly with hot soapy water. Rinse, dry, and air the box and return the food to its place IMMEDIATELY!

EXPENDITURES

Food items may be expended by issue, transfer, sale, or survey. This section discusses the way in which each of these expenditures is handled.

ISSUES

Issues to the enlisted dining facility are made on either Subsistence Report, NAVSUP Form 1059 and 1059-1, or Subsistence Item Request/Issue Document, NAVSUP Form 1282, as illustrated in Figures 4-1 and 4-8. Each morning the senior MS submits the signed original breakout documents to the food service officer covering food items issued to the enlisted dining facility on the previous day. The records Storekeeper posts the issues to the Subsistence Ledger and enters the fixed price on the issue document. The value of the issue is extended and totaled, the value of sales of galley produced bakery products is subtracted, and the balance is



SUBSISTENCE-ITEM REQUEST/ISSUE DOCUMENT (4400)

MS2 B. Erese (Requisitioned by–Signature)

1-3-76 (Del'y required)

J. R. Alpine, Ens. Treasurer (Approved by–Signature, rank, and title)

93409005 (Request No.)

(CODE)	(DESCRIPTION OF MATERIAL)	(REQUESTED)	(U/I)	(ISSUED)	(UNIT PRICE)	(VALUE)
	Rolls, sweet, iced	4	DZ	4	.35	1.40
	Doughnuts, iced	3	DZ	3	.21	.63

FOR: Wardroom Mess

TOTAL 2.03

ISSUED BY (Signature) MS1 Womack (Date) 1-3-76

RECEIVED BY (Signature) MS2 B. Erese (Date) 1-3-76

48.109

Figure 4-8.–Subsistence-item Requisition/Issue Document (NavSup Form 1282).

posted to the enlisted dining facility Control Record, NAVSUP Form 338 (Figure 4-9). Galley produced bakery products (bread, cake, pies and so forth) are prepared from food items which have been issued to the enlisted dining facility. Therefore, the value of these items which were sold to private dining facilities must be deducted from the value of issues to the enlisted dining facility. The value is based on prices contained in the current fixed price list. (NAVSUP Notice 7330)

The Ration Section includes 2 columns. Column 6 indicates the number fed daily. Column 7 is the cumulative total number of meals fed to date. The allowance section follows a similar pattern. Column 8 indicates the daily monetary allowance. Column 9 is the cumulative total of the monetary allowance authorized to date. Each entry in column 8 is a monetary figure which is obtained by multiplying the daily ration allowance by the number of rations entered for that day in column 6. The ration allowance varies for different types and sizes of ships and is subject to frequent changes which are made to reflect the current costs of food items. The daily total is added to the previous total to give the cumulative total for the accounting period. Column 10 indicates the monetary cost for meals prepared and served each day. Column 11 is the cumulative total of monetary expenditures for meals to date. Column 12 is a reflection of the difference between columns 11 and 9. An under issue is shown if the total ration cost (Column 11) is lower than the total allowance (column 9). An over issue is reflected if the total ration cost (Column 11) is greater than the monetary ration allowance (Column 9). Should this occur, the overissue should be posted in red ink and immediate action taken to eliminate the over issue.

The enlisted dining facility control record, NAVSUP Form 338, is a very important management tool for the food service officer and the senior MS. Each afternoon the executive or personnel officer informs the food service officer concerning the projected number of net rations for the enlisted dining facility for the following day. Each day's rations are posted and added to the previous day's total to provide the number of cumulative total rations for the quarter.

TRANSFERS

Transfers refer to expenditure transactions in which the custody of food items passes from one accountable officer to another. Transfer may be made on NAVSUP Form 1059 or DD Form 1348 or 1348-1, and are made at last receipt price. (NOTE: Ships making daily transfers to submarines and small craft prepare an invoice at the end of each month which recaps [illegible] issues made during the month, and is extended at the current price.)

Transfers are posted to the:

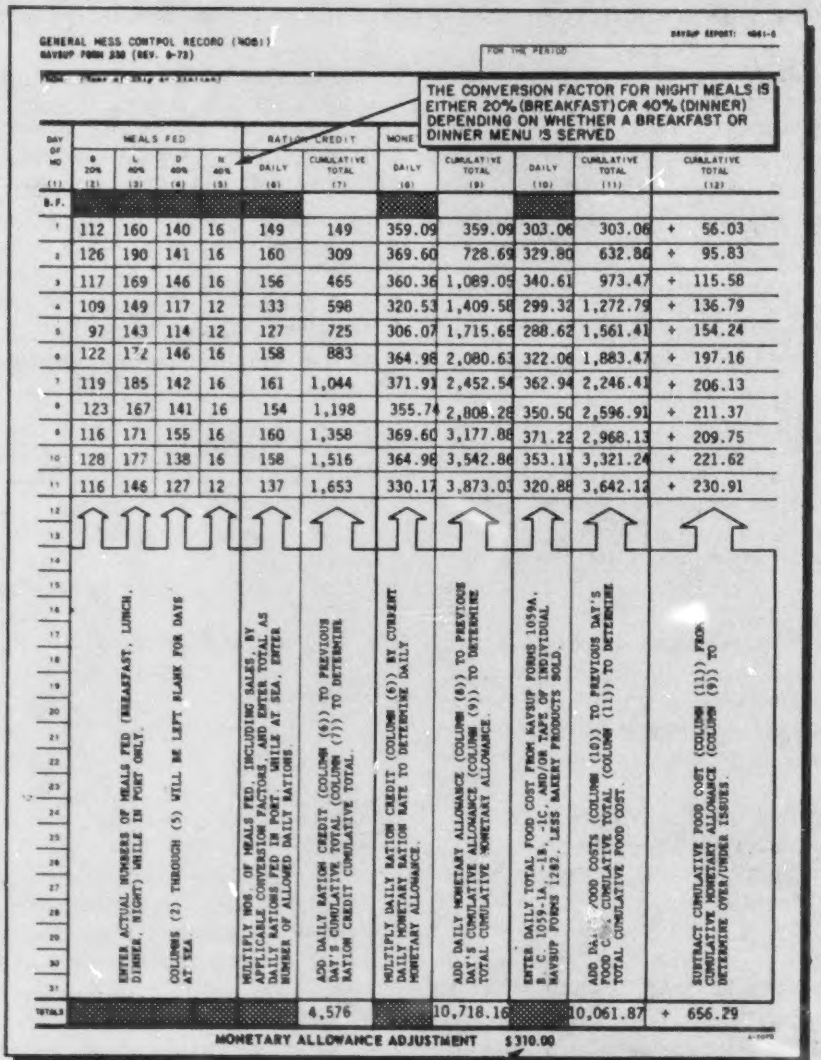
- Stock Tally Card, NAVSUP 209
- Subsistence Ledger, NAVSUP Form 335
- Record of Receipts and Expenditures, NAVSUP Form 367

The commanding officers of ships without Supply Corps officers assigned must approve all transfers in writing.

SALES

Food items may be sold to flag, cabin, wardroom, warrant officers', and CPO dining facilities when it will not deplete the quantity available to the enlisted dining facility.

An authorized representative of a private dining facility prepares a NAVSUP Forms 1059 and 1059-1, Subsistence Report, or NAVSUP Form 1282, Subsistence Item Request/Issue Document. All requests, regardless of the form used, must be serially numbered in a single series. A separate block of numbers may be assigned to each private dining facility by the accountable officer. The request for food items must be approved by the treasurer or his authorized representative. If a person other than the treasurer is authorized to approve requests, such authority must be furnished the accountable officer in writing.



GENERAL MESS CONTROL RECORD (4061)
NAVSUP FORM 338 (REV. 8-73)

NAVSUP REPORT: 4061-6

FOR THE PERIOD

FROM: (Name of Ship or Station)

THE CONVERSION FACTOR FOR NIGHT MEALS IS EITHER 20% (BREAKFAST) OR 40% (DINNER) DEPENDING ON WHETHER A BREAKFAST OR DINNER MENU IS SERVED

DAY OF MO	MEALS FED				RATION CREDIT		MONE				
(1)	B 20% (2)	L 40% (3)	D 40% (4)	N 40% (5)	DAILY (6)	CUMULATIVE TOTAL (7)	DAILY (8)	CUMULATIVE TOTAL (9)	DAILY (10)	CUMULATIVE TOTAL (11)	CUMULATIVE TOTAL (12)
B.F.											
1	112	160	140	16	149	149	359.09	359.09	303.06	303.06	+ 56.03
2	126	190	141	16	160	309	369.60	728.69	329.80	632.86	+ 95.83
3	117	169	146	16	156	465	360.36	1,089.05	340.61	973.47	+ 115.58
4	109	149	117	12	133	598	320.53	1,409.58	299.32	1,272.79	+ 136.79
5	97	143	114	12	127	725	306.07	1,715.65	288.62	1,561.41	+ 154.24
6	122	172	146	16	158	883	364.98	2,080.63	322.06	1,883.47	+ 197.16
7	119	185	142	16	161	1,044	371.91	2,452.54	362.94	2,246.41	+ 206.13
8	123	167	141	16	154	1,198	355.74	2,808.28	350.50	2,596.91	+ 211.37
9	116	171	155	16	160	1,358	369.60	3,177.88	371.22	2,968.13	+ 209.75
10	128	177	138	16	158	1,516	364.98	3,542.86	353.11	3,321.24	+ 221.62
11	116	146	127	12	137	1,653	330.17	3,873.03	320.88	3,642.12	+ 230.91
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
TOTALS						4,576		10,718.16		10,061.87	+ 656.29

ENTER ACTUAL NUMBERS OF MEALS FED (BREAKFAST, LUNCH, DINNER, NIGHT) WHILE IN PORT ONLY.

COLUMNS (2) THROUGH (5) WILL BE LEFT BLANK FOR DAYS AT SEA.

MULTIPLY NOS. OF MEALS FED, INCLUDING SALES, BY APPLICABLE CONVERSION FACTORS, AND ENTER TOTAL AS DAILY RATIONS FED IN PORT. WHILE AT SEA, ENTER NUMBER OF ALLOWED DAILY RATIONS.

ADD DAILY RATION CREDIT (COLUMN (6)) TO PREVIOUS DAY'S CUMULATIVE TOTAL (COLUMN (7)) TO DETERMINE RATION CREDIT CUMULATIVE TOTAL.

MULTIPLY DAILY RATION CREDIT (COLUMN (6)) BY CURRENT DAILY MONETARY RATION RATE TO DETERMINE DAILY MONETARY ALLOWANCE.

ADD DAILY MONETARY ALLOWANCE (COLUMN (8)) TO PREVIOUS DAY'S CUMULATIVE ALLOWANCE (COLUMN (9)) TO DETERMINE TOTAL CUMULATIVE MONETARY ALLOWANCE.

ENTER DAILY TOTAL FOOD COST FROM NAVSUP FORMS 1059A, B. C. 1059-1A, -1B, -1C, AND/OR TAPE OF INDIVIDUAL NAVSUP FORMS 1282, LESS BAKERY PRODUCTS SOLD.

ADD DAILY FOOD COSTS (COLUMN (10)) TO PREVIOUS DAY'S FOOD COST CUMULATIVE TOTAL (COLUMN (11)) TO DETERMINE TOTAL CUMULATIVE FOOD COST.

SUBTRACT CUMULATIVE FOOD COST (COLUMN (11)) FROM CUMULATIVE MONETARY ALLOWANCE (COLUMN (9)) TO DETERMINE OVER/UNDER ISSUES.

MONETARY ALLOWANCE ADJUSTMENT $310.00

TO COMPUT A MONETARY ALLOWANCE ADJUSTMENT FIGURE TAKE THE TOTAL NUMBER OF RATIONS (4,576 COLUMN (7)) CLAIMED AND DIVIDE THIS BY THE TOTAL NUMBER OF DAYS (31) IN THE PERIOD. THE RESULT (147.5) WILL SHOW WHETHER A SUPPLEMENTAL ALLOWANCE IS APPLICABLE FOR THE ENTIRE PERIOD. IF APPLICABLE, TAKE THE TOTAL RATIONS (4,576, COLUMN (7)) AND MULTIPLY BY THE BASIC PLUS SUPPLEMENTAL ALLOWANCE RATE (4,576 × $2.41 = $11,028.16 (BASIC RATE $2.31 PLUS SUPPLEMENTAL RATE $.10)). FROM THIS FIGURE ($11,028.16) SUBTRACT THE TOTAL MONETARY ALLOWANCE ($10,718.16, COLUMN (9)). THE DIFFERENCE ($310.60) IS THE MONETARY ALLOWANCE ADJUSTMENT.

NOTES

1. THE TERMINOLOGY OF "GENERAL MESS" PREPRINTED ON THIS FORM WILL BE CHANGED TO "ENLISTED DINING FACILITY" UPON THE NEXT REVISION TO NAVSUP FORM 438.
2. INFORMATION IS TYPED ON THIS ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES.

48.110

Figure 4-9.—Enlisted Dining Facility Control Record (NavSup Form 338—Afloat).

All sales to private dining facilities are priced at the last receipt price except galley-produced bakery products which are priced according to the price list contained in the current fixed price list and certain cuts of meat which are priced according to the NAVSUP P-486.

When the food items are received, the dining facility representative signs the original and two copies of the issue document, which are distributed as follows:

Original-retained in the custody of the accountable officer under lock and key.

Duplicate-returned to the dining facility representative.

Triplicate-posted to Stock Tally Card and forwarded to the supply office for posting to the Subsistence Ledger.

At the end of each month, the total money value of items sold is posted on the expenditure side of the NAVSUP Form 367. A billing document (money value only) is prepared and submitted to the cognizant treasurer not later than the 6th of the month following the period covered. Applicable issue documents are listed by document number on the billing document. The following format is used when the billing document is prepared:

"I certify that food items in the amount of \$_____were sold to the_____dining facility during the month of_________________?"
(month and year)

(When applicable add:

"The above total includes galley produced bakery products in the amount of \$_____). Issues were made on the documents listed below:"

____
(Signature and Rank)

A copy of the statement must be forwarded to the disbursing officer. On or before the 10th day of the month, the treasurer will pay the amount due to the disbursing officer and obtain a signature for receipt of the cash in a Cash Receipt Book (NAVSUP 470). A copy of the billing document will be used to post the NAVSUP Form 367 and to prepare the Ration and Sales Report (NAVSUP Form 1357).

SURVEY

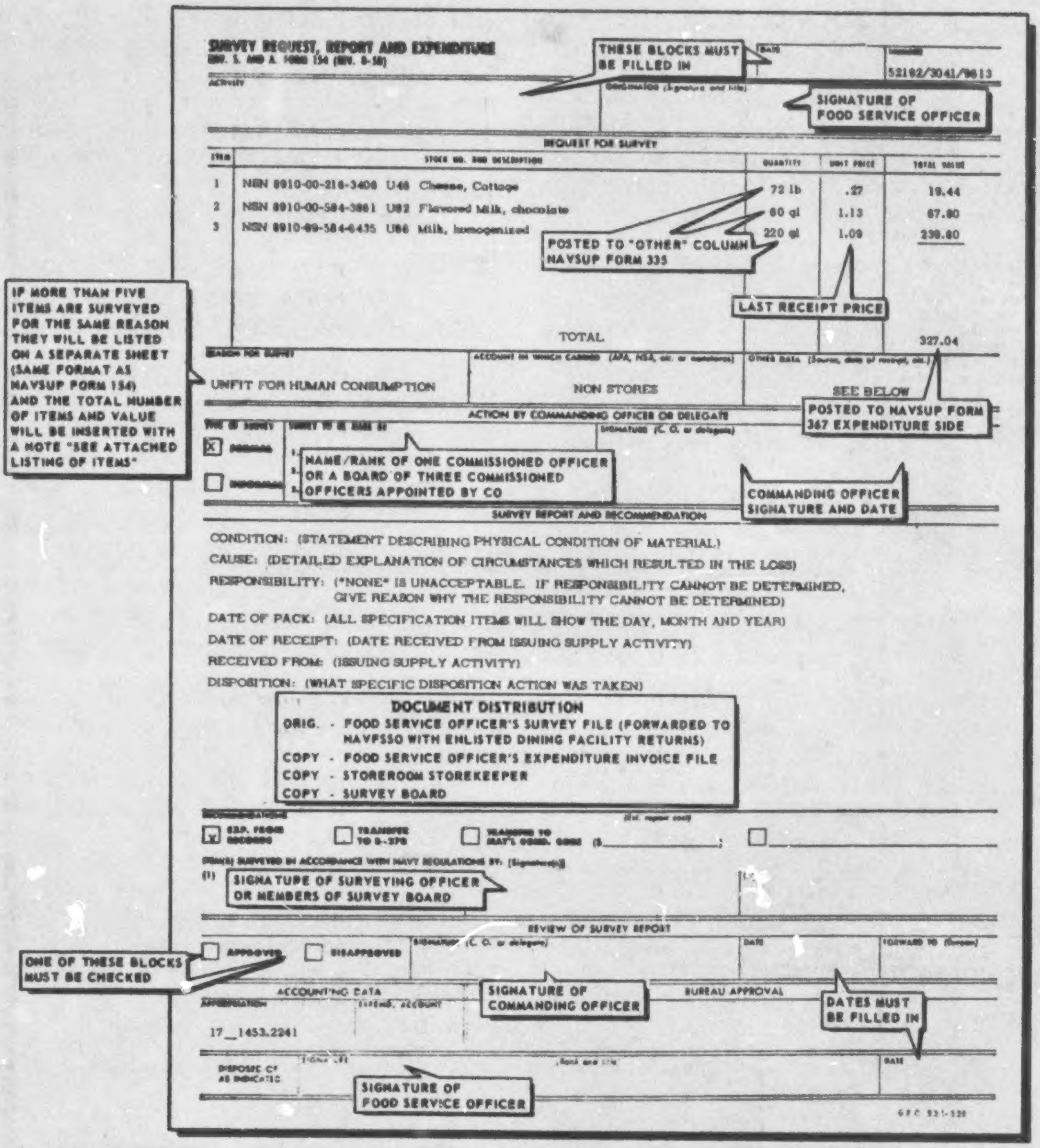
When a survey is required, the food service officer initiates the request for survey on a Survey Request Report and Expenditure, NAVSUP Form 154 (Figures 10 & 11) and submits the form to the commanding officer. The following data, in addition to that on the form, are inserted on each survey request prepared for food items:

- Date of pack.
- Date of receipt.
- Activity from which material was received.
- Contract number, lot number, and contractor, when contractor can be determined.
- Pertinent data for evaluating cause of loss (inadequate packaging, pinholing of cans, improper storage conditions, condition on receipt, handling damage, and so forth).

The commanding officer will determine whether a formal or informal survey is required and select the officer if an informal survey is required or a board of officers if a formal survey is required.

The following officers can not serve on a survey board:

1. The commanding officer.
2. The officer on whose records the material being surveyed is carried.
3. The officer charged with custody of the material being surveyed.



SURVEY REQUEST, REPORT AND EXPENDITURE
NAV. S. AND A. FORM 154 (REV. 8-58)

THESE BLOCKS MUST BE FILLED IN

DATE

52102/3041/9613

ACTIVITY

ORIGINATOR (Signature and title)

SIGNATURE OF FOOD SERVICE OFFICER

REQUEST FOR SURVEY

ITEM	STOCK NO. AND DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL VALUE
1	NSN 8910-00-216-3406 U46 Cheese, Cottage	72 lb	.27	19.44
2	NSN 8910-00-584-3861 U82 Flavored Milk, chocolate	60 gl	1.13	67.80
3	NSN 8910-00-584-6435 U86 Milk, homogenized	220 gl	1.09	239.80
	TOTAL			327.04

POSTED TO "OTHER" COLUMN NAVSUP FORM 335

LAST RECEIPT PRICE

IF MORE THAN FIVE ITEMS ARE SURVEYED FOR THE SAME REASON THEY WILL BE LISTED ON A SEPARATE SHEET (SAME FORMAT AS NAVSUP FORM 154) AND THE TOTAL NUMBER OF ITEMS AND VALUE WILL BE INSERTED WITH A NOTE "SEE ATTACHED LISTING OF ITEMS"

REASON FOR SURVEY: UNFIT FOR HUMAN CONSUMPTION

ACCOUNT IN WHICH CARRIED (APA, NSA, etc. or nonstores): NON STORES

OTHER DATA (Source, date of receipt, etc.): SEE BELOW

POSTED TO NAVSUP FORM 367 EXPENDITURE SIDE

ACTION BY COMMANDING OFFICER OR DELEGATE

TYPE OF SURVEY: ☒ FORMAL ☐ INFORMAL

SURVEY TO BE MADE BY: 1. 2. 3.

NAME/RANK OF ONE COMMISSIONED OFFICER OR A BOARD OF THREE COMMISSIONED OFFICERS APPOINTED BY CO

SIGNATURE (C. O. or delegate)

COMMANDING OFFICER SIGNATURE AND DATE

SURVEY REPORT AND RECOMMENDATION

CONDITION: (STATEMENT DESCRIBING PHYSICAL CONDITION OF MATERIAL)

CAUSE: (DETAILED EXPLANATION OF CIRCUMSTANCES WHICH RESULTED IN THE LOSS)

RESPONSIBILITY: ("NONE" IS UNACCEPTABLE. IF RESPONSIBILITY CANNOT BE DETERMINED, GIVE REASON WHY THE RESPONSIBILITY CANNOT BE DETERMINED)

DATE OF PACK: (ALL SPECIFICATION ITEMS WILL SHOW THE DAY, MONTH AND YEAR)

DATE OF RECEIPT: (DATE RECEIVED FROM ISSUING SUPPLY ACTIVITY)

RECEIVED FROM: (ISSUING SUPPLY ACTIVITY)

DISPOSITION: (WHAT SPECIFIC DISPOSITION ACTION WAS TAKEN)

DOCUMENT DISTRIBUTION

ORIG. - FOOD SERVICE OFFICER'S SURVEY FILE (FORWARDED TO NAVFSSO WITH ENLISTED DINING FACILITY RETURNS)
COPY - FOOD SERVICE OFFICER'S EXPENDITURE INVOICE FILE
COPY - STOREROOM STOREKEEPER
COPY - SURVEY BOARD

RECOMMENDATIONS

☒ EXP. FROM RECORDS ☐ TRANSFER TO S-378 ☐ TRANSFER TO MAT'L COND. CODE (Est. repair cost) ($________); ☐ ________

ITEM(S) SURVEYED IN ACCORDANCE WITH NAVY REGULATIONS BY: (Signature(s))

(1) SIGNATURE OF SURVEYING OFFICER OR MEMBERS OF SURVEY BOARD

REVIEW OF SURVEY REPORT

☐ APPROVED ☐ DISAPPROVED SIGNATURE (C. O. or delegate) DATE FORWARD TO (Bureau)

ONE OF THESE BLOCKS MUST BE CHECKED

SIGNATURE OF COMMANDING OFFICER

DATES MUST BE FILLED IN

ACCOUNTING DATA

APPROPRIATION: 17__1453.2241

EXPEND. ACCOUNT

BUREAU APPROVAL

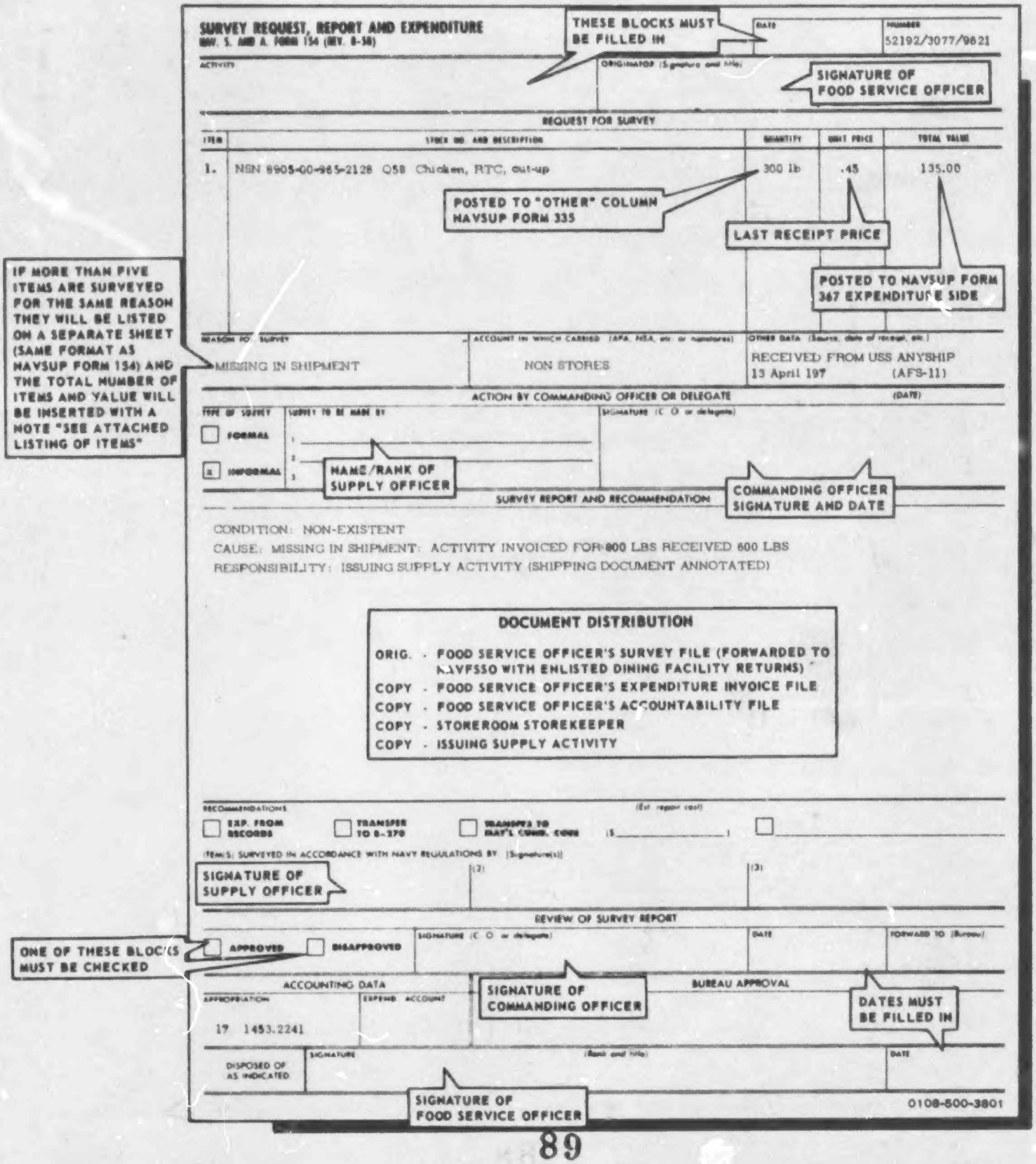
DISPOSED OF AS INDICATED SIGNATURE (Rank and title) DATE

SIGNATURE OF FOOD SERVICE OFFICER

GPO 931-520

48.111

Figure 4-10.—Formal Survey Request, Report and Expenditure (NavSup Form 154).



SURVEY REQUEST, REPORT AND EXPENDITURE
NAV. S. AND A. FORM 154 (REV. 8-58)

DATE:
NUMBER: 52192/3077/9621
ACTIVITY:
ORIGINATOR (Signature and title):

THESE BLOCKS MUST BE FILLED IN

SIGNATURE OF FOOD SERVICE OFFICER

REQUEST FOR SURVEY

ITEM	STOCK NO. AND DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL VALUE
1.	NSN 8905-00-965-2128 Q58 Chicken, RTC, cut-up	300 lb	.45	135.00

POSTED TO "OTHER" COLUMN NAVSUP FORM 335

LAST RECEIPT PRICE

POSTED TO NAVSUP FORM 367 EXPENDITURE SIDE

REASON FOR SURVEY	ACCOUNT IN WHICH CARRIED (APA, NSA, etc. or nonstores)	OTHER DATA (Source, date of receipt, etc.)
MISSING IN SHIPMENT	NON STORES	RECEIVED FROM USS ANYSHIP 13 April 197 (AFS-11)

IF MORE THAN FIVE ITEMS ARE SURVEYED FOR THE SAME REASON THEY WILL BE LISTED ON A SEPARATE SHEET (SAME FORMAT AS NAVSUP FORM 154) AND THE TOTAL NUMBER OF ITEMS AND VALUE WILL BE INSERTED WITH A NOTE "SEE ATTACHED LISTING OF ITEMS"

ACTION BY COMMANDING OFFICER OR DELEGATE (DATE)

TYPE OF SURVEY:
☐ FORMAL
☒ INFORMAL

SURVEY TO BE MADE BY:
1 ______
2 ______
3

SIGNATURE (C. O. or delegate):

NAME/RANK OF SUPPLY OFFICER

COMMANDING OFFICER SIGNATURE AND DATE

SURVEY REPORT AND RECOMMENDATION

CONDITION: NON-EXISTENT
CAUSE: MISSING IN SHIPMENT: ACTIVITY INVOICED FOR 900 LBS RECEIVED 600 LBS
RESPONSIBILITY: ISSUING SUPPLY ACTIVITY (SHIPPING DOCUMENT ANNOTATED)

DOCUMENT DISTRIBUTION

- ORIG. - FOOD SERVICE OFFICER'S SURVEY FILE (FORWARDED TO NAVFSSO WITH ENLISTED DINING FACILITY RETURNS)
- COPY - FOOD SERVICE OFFICER'S EXPENDITURE INVOICE FILE
- COPY - FOOD SERVICE OFFICER'S ACCOUNTABILITY FILE
- COPY - STOREROOM STOREKEEPER
- COPY - ISSUING SUPPLY ACTIVITY

RECOMMENDATIONS:
☐ EXP. FROM RECORDS ☐ TRANSFER TO S-270 ☐ TRANSFER TO NAT'L CUMB. CODE (Est. repair cost) ($______) ☐ ______

ITEM(S) SURVEYED IN ACCORDANCE WITH NAVY REGULATIONS BY (Signature(s)):
(2)
(3)

SIGNATURE OF SUPPLY OFFICER

REVIEW OF SURVEY REPORT

☐ APPROVED ☐ DISAPPROVED
SIGNATURE (C. O. or delegate):
DATE:
FORWARD TO (Bureau):

ONE OF THESE BLOCKS MUST BE CHECKED

SIGNATURE OF COMMANDING OFFICER

ACCOUNTING DATA
APPROPRIATION: 17 1453.2241
EXPEND. ACCOUNT:
BUREAU APPROVAL

DATES MUST BE FILLED IN

DISPOSED OF AS INDICATED
SIGNATURE (Rank and title):
DATE:

SIGNATURE OF FOOD SERVICE OFFICER

0108-500-3801

48.111.1

Figure 4-11.—Informal Survey Request, Report and Expenditure (NavSup Form 154).

When a formal survey is not required, the head of the department having custody will make an informal survey.

However, food items may be expended without survey in the following situations:

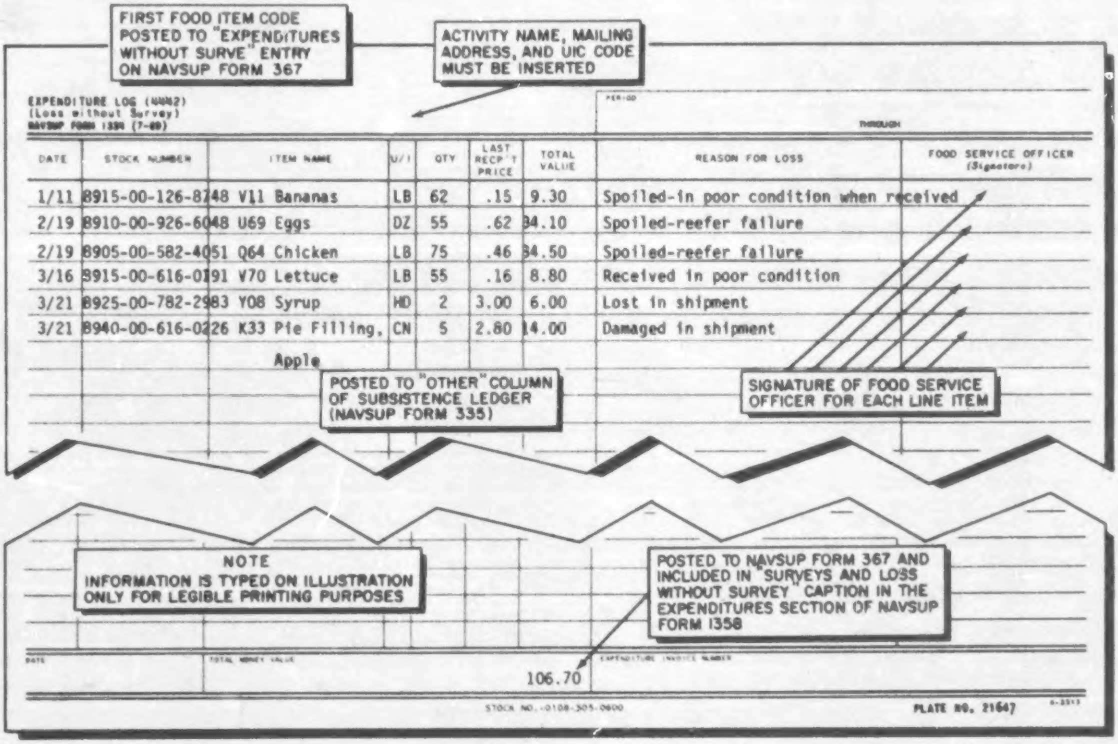
(1) When the responsibility for the loss is not blamed on an individual.

(2) When the material is short, damaged, or lost in shipment, and the value of the loss is less than $10 per receipt document.

(3) When the material is lost as a result of physical deterioration, damage in handling, fire, water, or other similar circumstances, and the value of the loss is less than $50 per line item not to exceed $150 for the same reason.

When the loss without survey method is used, and Expenditure Log (NAVSUP Form 1334) is maintained to record the material losses as they occur. All entries must be made in ink. See Figure 4-12. The food service officer must sign each entry.

As each expenditure is entered in the expenditure log, it is also posted to the Subsistence Ledger under the column "Other" and the balance on hand reduced. The invoice number is entered opposite the total value as the last entry in the log, and the invoice is posted as an expenditure to the Record of Receipts and Expenditures. The NAVSUP Form 1334 will be forwarded with the enlisted dining facility returns rendered to the Navy Food Service Systems Office.



FIRST FOOD ITEM CODE POSTED TO "EXPENDITURES WITHOUT SURVE" ENTRY ON NAVSUP FORM 367

ACTIVITY NAME, MAILING ADDRESS, AND UIC CODE MUST BE INSERTED

EXPENDITURE LOG (4442)
(Loss without Survey)
NAVSUP FORM 1334 (7-69)

PERIOD

THROUGH

DATE	STOCK NUMBER	ITEM NAME	U/I	QTY	LAST RECP'T PRICE	TOTAL VALUE	REASON FOR LOSS	FOOD SERVICE OFFICER (Signature)
1/11	8915-00-126-8748	V11 Bananas	LB	62	.15	9.30	Spoiled-in poor condition when received	
2/19	8910-00-926-6048	U69 Eggs	DZ	55	.62	34.10	Spoiled-reefer failure	
2/19	8905-00-582-4051	Q64 Chicken	LB	75	.46	34.50	Spoiled-reefer failure	
3/16	8915-00-616-0191	V70 Lettuce	LB	55	.16	8.80	Received in poor condition	
3/21	8925-00-782-2983	Y08 Syrup	HD	2	3.00	6.00	Lost in shipment	
3/21	8940-00-616-0226	K33 Pie Filling, Apple	CN	5	2.80	14.00	Damaged in shipment	

POSTED TO "OTHER" COLUMN OF SUBSISTENCE LEDGER (NAVSUP FORM 335)

SIGNATURE OF FOOD SERVICE OFFICER FOR EACH LINE ITEM

NOTE
INFORMATION IS TYPED ON ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES

POSTED TO NAVSUP FORM 367 AND INCLUDED IN "SURVEYS AND LOSS WITHOUT SURVEY" CAPTION IN THE EXPENDITURES SECTION OF NAVSUP FORM 1358

DATE	TOTAL MONEY VALUE	EXPENDITURE INVOICE NUMBER
	106.70	

STOCK NO.-0108-305-0600

PLATE NO. 21647

90

43.3-48.108

Figure 4-12.–Expenditure Log (NavSup Form 1334).

SUBMITTING RETURNS

The Enlisted Dining Facility Operating Statement (NAVSUP Form 1358) with supporting documents is submitted within 10 days after the end of each accounting period (quarters ending 30 Sep., 31 Dec., 31 Mar., and 30 Jun.) The returns serve the following purposes:

- Establish proper accountability.
- Basis for proper distribution of accounting charges.
- Ensure compliance with budgetary control measures.
- Furnish information necessary for ration control.

When the accountable officer is relieved with 30 days from the beginning or the end of the accounting period, the relieved or relieving officer, with the written approval of the commanding officer, may merge (combine) the returns for the remaining time in that period with the next period's returns, or combine up to 30 days of the next period with the current period.

Ships Without Supply Corps Officers

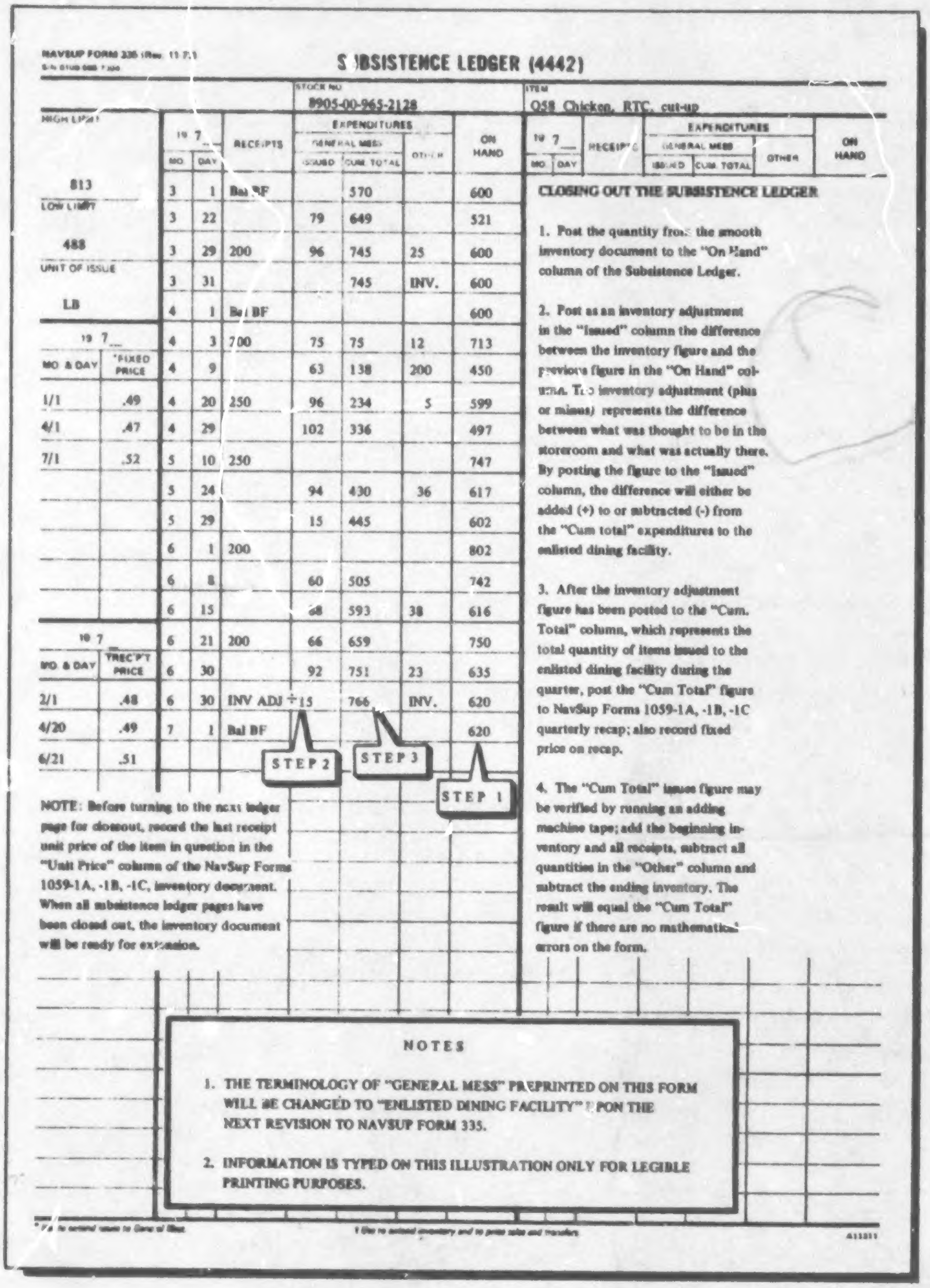
On ships without Supply Corps Officers, the commanding officer designates in writing a line officer as the accountable officer for the enlisted dining facility. Inventories are taken quarterly and upon relief of the accountable officer. Returns are submitted quarterly; returns need not be submitted if upon the relief of the accountable officer the relieving officer is satisfied with the financial condition of the enlisted dining facility.

INVENTORY

An inventory of all food items must be taken during each accounting period. Storerooms should be prepared for inventory by segregating items and making all items accessible for counting. Only emergency issues, breakouts, or transfers should be made during the inventory period. The inventory may be recorded directly on NAVSUP Forms 1059 and 1059-1, or it may be recorded on a ruled pad or other suitable form. Ink or indelible pencil must be used to record the inventory. When the inventory is recorded on the NAVSUP Forms 1059 and 1059-1, it should be prepared in an original and one copy. then it is not necessary to prepare additional copies. Only one copy of the rough inventory is authorized when it is recorded on a ruled pad or other forms, the quantities must be transcribed to NAVSUP Forms 1059 and 1059-1 (original and one copy), and the rough inventory sheets attached to the original. The officer conducting the inventory and the responsible storeroom custodian certify both copies of the inventory. The original is retained by the accountable officer; the duplicate is used by the storeroom custodian to post the inventory to the Stock Tally Cards, and by the office Storekeeper to post the Subsistence Ledger. The total inventory value is determined by pricing each item on the inventory at the last receipt price, extending the total item value, and adding the totals of all pages.

The inventory is posted to the Subsistence Ledger, and if necessary, a plus or minus adjustment is recorded in the "expenditures to the enlisted dining facility" column to bring the "On Hand" quantity into agreement with the inventory. This entry is illustrated in Figure 4-13. Any difference in excess of five percent of the inventory quantity must be investigated by the food service officer to determine the cause and to prevent a recurrence. All adjustments must be recapped on the NAVSUP Forms 1059 and 1059-1 since inventory adjustments are absorbed in the operation of the enlisted dining facility.

An optional method of conducting the inventory is authorized by NAVSUP P-486. Because of the heavy workload at the end of the quarter the food service officer may conduct the inventory at any time during the last month of the quarter. When he chooses this method, the inventory is taken and smooth copies prepared and posted to the NAVSUP 335 as discussed above. On the last day of the accounting period, the smooth inventory is prepared, using the



NAVSUP FORM 335 (Rev. 11-73)

SUBSISTENCE LEDGER (4442)

STOCK NO: 8905-00-965-2128

ITEM: O58 Chicken, RTC, cut-up

HIGH LIMIT: 813

LOW LIMIT: 488

UNIT OF ISSUE: LB

19 7__ MO.	DAY	RECEIPTS	EXPENDITURES GENERAL MESS ISSUED	CUM. TOTAL	OTHER	ON HAND
3	1	Bal BF		570		600
3	22		79	649		521
3	29	200	96	745	25	600
3	31			745	INV.	600
4	1	Bal BF				600
4	3	700	75	75	12	713
4	9		63	138	200	450
4	20	250	96	234	5	599
4	29		102	336		497
5	10	250				747
5	24		94	430	36	617
5	29		15	445		602
6	1	200				802
6	8		60	505		742
6	15		68	593	38	616
6	21	200	66	659		750
6	30		92	751	23	635
6	30	INV ADJ	+15	766	INV.	620
7	1	Bal BF				620

19 7__ MO. & DAY	*FIXED PRICE
1/1	.49
4/1	.47
7/1	.52

19 7__ MO. & DAY	†REC'PT PRICE
2/1	.48
4/20	.49
6/21	.51

NOTE: Before turning to the next ledger page for closeout, record the last receipt unit price of the item in question in the "Unit Price" column of the NavSup Forms 1059-1A, -1B, -1C, inventory document. When all subsistence ledger pages have been closed out, the inventory document will be ready for extension.

CLOSING OUT THE SUBSISTENCE LEDGER

1. Post the quantity from the smooth inventory document to the "On Hand" column of the Subsistence Ledger.

2. Post as an inventory adjustment in the "Issued" column the difference between the inventory figure and the previous figure in the "On Hand" column. The inventory adjustment (plus or minus) represents the difference between what was thought to be in the storeroom and what was actually there. By posting the figure to the "Issued" column, the difference will either be added (+) to or subtracted (-) from the "Cum total" expenditures to the enlisted dining facility.

3. After the inventory adjustment figure has been posted to the "Cum. Total" column, which represents the total quantity of items issued to the enlisted dining facility during the quarter, post the "Cum Total" figure to NavSup Forms 1059-1A, -1B, -1C quarterly recap; also record fixed price on recap.

4. The "Cum Total" issues figure may be verified by running an adding machine tape; add the beginning inventory and all receipts, subtract all quantities in the "Other" column and subtract the ending inventory. The result will equal the "Cum Total" figure if there are no mathematical errors on the form.

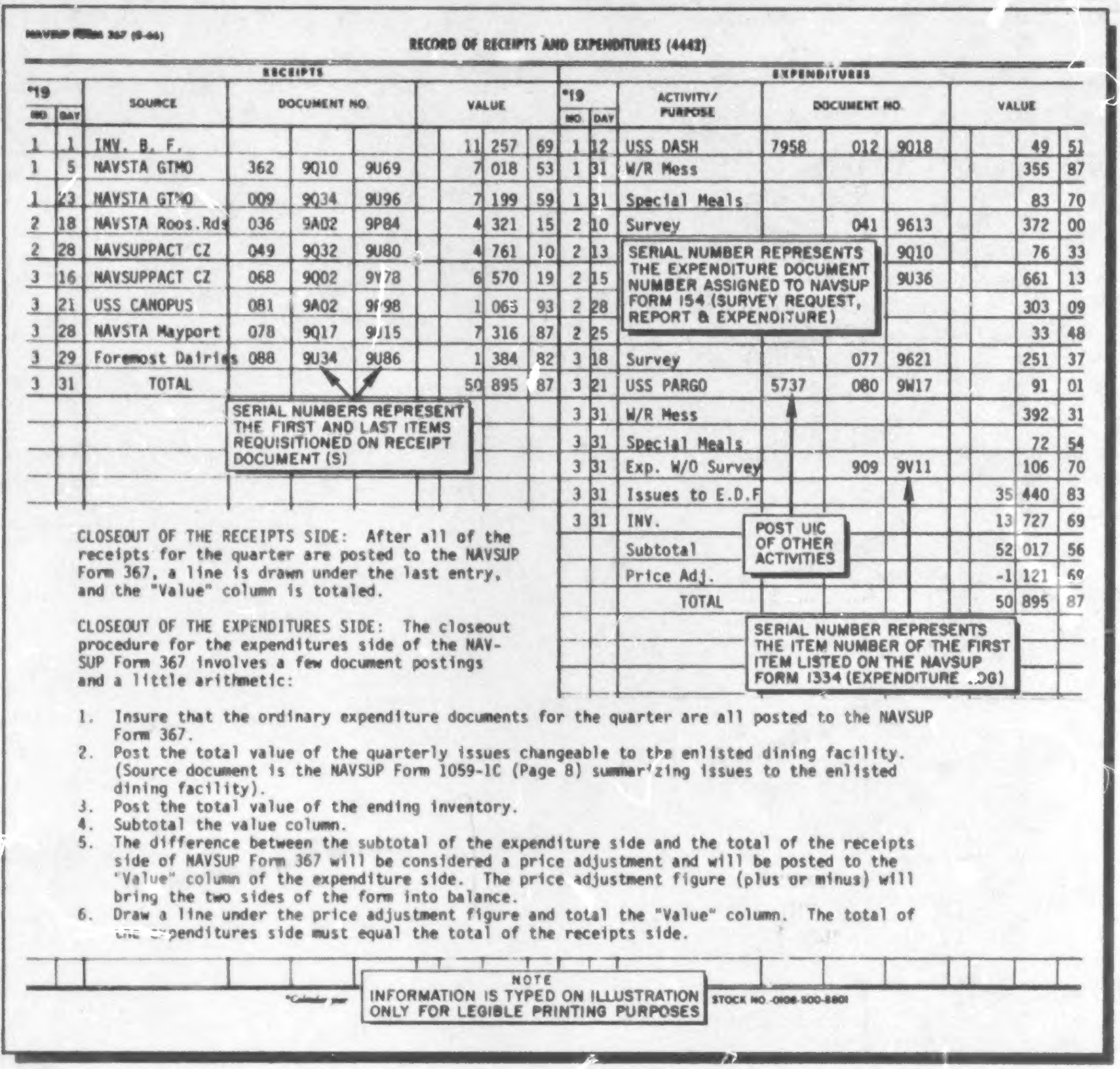
NOTES

1. THE TERMINOLOGY OF "GENERAL MESS" PREPRINTED ON THIS FORM WILL BE CHANGED TO "ENLISTED DINING FACILITY" UPON THE NEXT REVISION TO NAVSUP FORM 335.

2. INFORMATION IS TYPED ON THIS ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES.

10.81

Figure 4-13.—Closing out the Subsistence Ledger Sheet (NavSup Form 335).



NAVSUP FORM 367 (8-66)

RECORD OF RECEIPTS AND EXPENDITURES (4442)

RECEIPTS

*19 MO.	DAY	SOURCE	DOCUMENT NO.			VALUE			
1	1	INV. B. F.					11	257	69
1	5	NAVSTA GTMO	362	9Q10	9U69		7	018	53
1	23	NAVSTA GTMO	009	9Q34	9U96		7	199	59
2	18	NAVSTA Roos.Rds	036	9A02	9P84		4	321	15
2	28	NAVSUPPACT CZ	049	9Q32	9U80		4	761	10
3	16	NAVSUPPACT CZ	068	9Q02	9Y78		6	570	19
3	21	USS CANOPUS	081	9A02	9P98		1	065	93
3	28	NAVSTA Mayport	078	9Q17	9U15		7	316	87
3	29	Foremost Dairies	088	9U34	9U86		1	384	82
3	31	TOTAL					50	895	87

SERIAL NUMBERS REPRESENT THE FIRST AND LAST ITEMS REQUISITIONED ON RECEIPT DOCUMENT (S)

EXPENDITURES

*19 MO.	DAY	ACTIVITY/ PURPOSE	DOCUMENT NO.			VALUE			
1	12	USS DASH	7958	012	9018			49	51
1	31	W/R Mess						355	87
1	31	Special Meals						83	70
2	10	Survey		041	9613			372	00
2	13				9Q10			76	33
2	15				9U36			661	13
2	28							303	09
2	25							33	48
3	18	Survey		077	9621			251	37
3	21	USS PARGO	5737	080	9W17			91	01
3	31	W/R Mess						392	31
3	31	Special Meals						72	54
3	31	Exp. W/O Survey		909	9V11			106	70
3	31	Issues to E.D.F					35	440	83
3	31	INV.					13	727	69
		Subtotal					52	017	56
		Price Adj.					-1	121	69
		TOTAL					50	895	87

SERIAL NUMBER REPRESENTS THE EXPENDITURE DOCUMENT NUMBER ASSIGNED TO NAVSUP FORM 154 (SURVEY REQUEST, REPORT & EXPENDITURE)

POST UIC OF OTHER ACTIVITIES

SERIAL NUMBER REPRESENTS THE ITEM NUMBER OF THE FIRST ITEM LISTED ON THE NAVSUP FORM 1334 (EXPENDITURE LOG)

CLOSEOUT OF THE RECEIPTS SIDE: After all of the receipts for the quarter are posted to the NAVSUP Form 367, a line is drawn under the last entry, and the "Value" column is totaled.

CLOSEOUT OF THE EXPENDITURES SIDE: The closeout procedure for the expenditures side of the NAVSUP Form 367 involves a few document postings and a little arithmetic:

1. Insure that the ordinary expenditure documents for the quarter are all posted to the NAVSUP Form 367.
2. Post the total value of the quarterly issues changeable to the enlisted dining facility. (Source document is the NAVSUP Form 1059-1C (Page 8) summarizing issues to the enlisted dining facility).
3. Post the total value of the ending inventory.
4. Subtotal the value column.
5. The difference between the subtotal of the expenditure side and the total of the receipts side of NAVSUP Form 367 will be considered a price adjustment and will be posted to the "Value" column of the expenditure side. The price adjustment figure (plus or minus) will bring the two sides of the form into balance.
6. Draw a line under the price adjustment figure and total the "Value" column. The total of the expenditures side must equal the total of the receipts side.

*Calendar year

NOTE
INFORMATION IS TYPED ON ILLUSTRATION ONLY FOR LEGIBLE PRINTING PURPOSES

STOCK NO. 0108-500-8801

48.112

Figure 4-14.—Record of Receipts and Expenditures (NavSup Form 367).

balance on the Subsistence Ledger as the inventory quantities.

CLOSING THE SUBSISTENCE LEDGER (NAVSUP Form 335)

Figure 4-13 shows the closing entries on the Subsistence Ledger. The issues to the enlisted dining facility are totaled, and the totals recorded on a NAVSUP Forms 1059 and 1059-1 to determine the total value of issues to the enlisted dining facility for the quarter. This is computed at fixed price or, when a fixed price has not been established, at the last receipt price. The Subsistence Ledger is ruled and the ending inventory is brought forward as the first entry for the next quarter. When the optional inventory method has been used, the "On Hand" quantity is brought forward as the opening inventory quantity.

CLOSING THE RECORD OF RECEIPTS AND EXPENDITURES

The NAVSUP Forms 1059 and 1059-1, which recapped issues to the enlisted dining facility, are totaled. The value of galley produced bakery products (taken from the monthly cash sales invoices) is entered and deducted from the total issues to determine the actual value of food items consumed in the enlisted dining facility. This total is posted to the NAVSUP Form 367, Record of Receipts and Expenditures. See Figure 4-14.

The money value invoice covering expenditures without survey (from the expenditure log) and the value of the closing inventory are posted. Then both the receipts and expenditures sides of the NAVSUP Form 367 are totaled. It will be necessary to enter a plus or minus price adjustment to balance the NAVSUP Form 367 since the amounts posted to the receipts side are invoice prices and the amounts posted to the expenditure side are computed at both fixed price and last receipt price, depending upon the type of transaction. The price adjustment is the amount necessary to bring the NAVSUP P-367 into balance. These entries are illustrated in Figure 4-14.

PREPARING THE ENLISTED DINING FACILITY OPERATING STATEMENT (NAVSUP FORM 1358)

The Enlisted Dining Facility Operating Statement (NAVSUP Form 1358) is prepared at the end of each quarter and upon relief of the accountable officer. An original and two copies are prepared. All entries on the Balance Sheet side are taken from, and must be in agreement with, the NAVSUP P-367. The Enlisted Dining Facility Operating Statement, NAVSUP Form 1358 (Figure 4-15) has been based on a ship with a Supply Corps officer assigned. Some of the transactions shown have not been discussed but are explained in detail in NAVSUP P-486.

SUBSTANTIATION OF SUBSISTENCE RETURNS

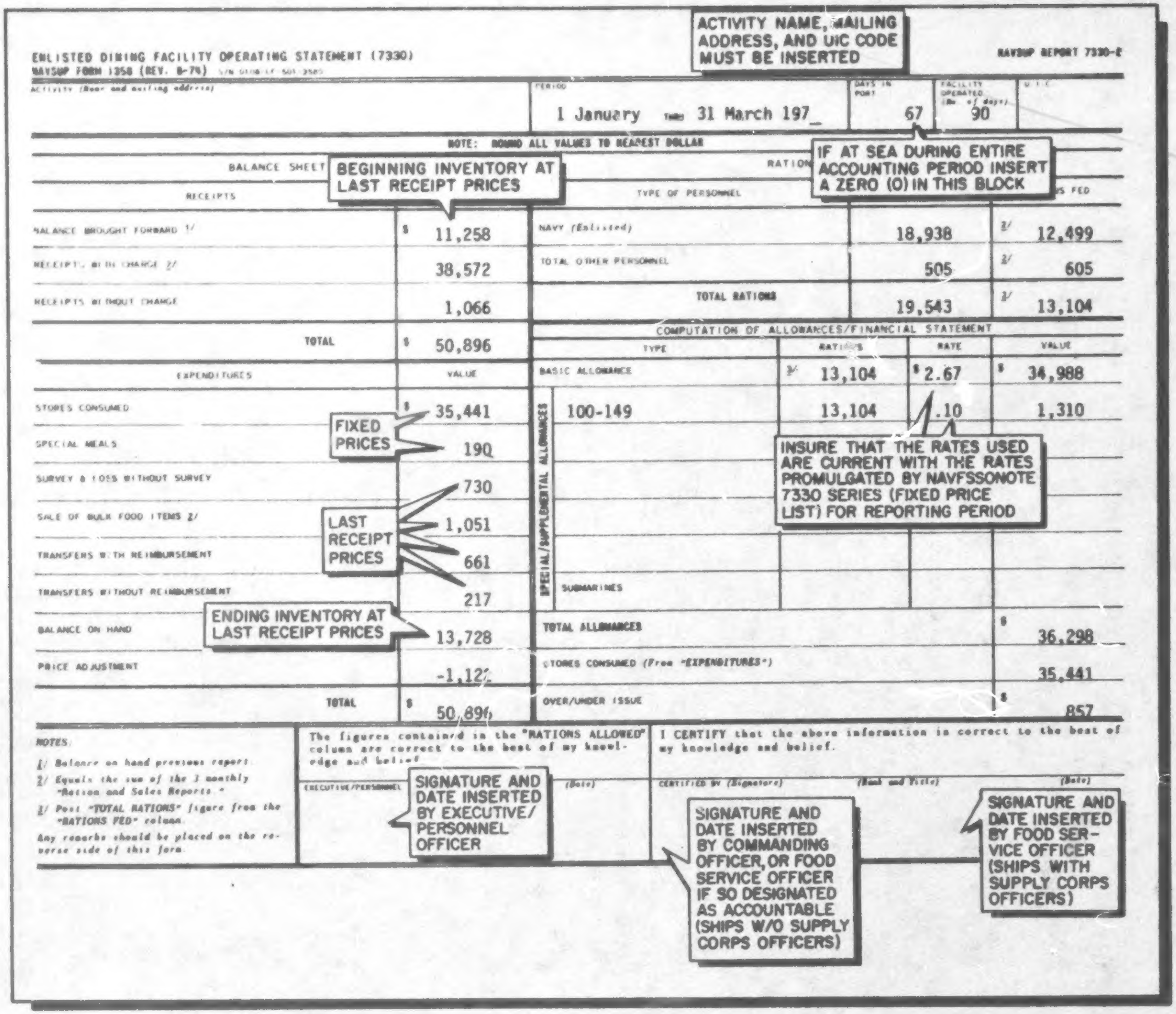
The original and one copy of the Enlisted Dining Facility Financial Statement (NAVSUP Form 1358) is submitted to the Navy Food Service Systems Office as follows:

1. Within 10 days following the end of each accounting period including merged periods,

2. Within 10 days following the date of relief of the accountable officer (if returns are required).

When a financial statement is submitted to NFSSO, the financial statement must be supported with the substantiating documents listed below.

NavSup Form 1358 caption	Substantiating document
Balance sheet receipts	
Receipts with charge (Navy Stock Account activities only)	Summary of Material Receipts/Expenditures (NavCompt Form 176) (original)
(Ships and end use activities)	Order and Inspection Report (NavSup Form 48) or Order for Supplies or Services/Request for Quotations (DD Form 1155), as applicable.
	(Documents for receipts from Navy supply points and stores ships are not required)
Expenditures (all activities)	
Stores consumed	Summary of issues to the enlisted dining facility (original)
Survey and loss without survey	Survey Request, Report and Expenditure (NavSup Form 154) (original)



ENLISTED DINING FACILITY OPERATING STATEMENT (7330)
NAVSUP FORM 1358 (REV. 8-74) S/N 0108-LF-501-3585

NAVSUP REPORT 7330-E

ACTIVITY (Name and mailing address)	PERIOD	DAYS IN PORT	FACILITY OPERATED (No. of days)	U.I.C.
	1 January THRU 31 March 197_	67	90	

NOTE: ROUND ALL VALUES TO NEAREST DOLLAR

BALANCE SHEET

RECEIPTS	
BALANCE BROUGHT FORWARD 1/	$ 11,258
RECEIPTS WITH CHARGE 2/	38,572
RECEIPTS WITHOUT CHARGE	1,066
TOTAL	$ 50,896
EXPENDITURES	VALUE
STORES CONSUMED	$ 35,441
SPECIAL MEALS	190
SURVEY & LOSS WITHOUT SURVEY	730
SALE OF BULK FOOD ITEMS 2/	1,051
TRANSFERS WITH REIMBURSEMENT	661
TRANSFERS WITHOUT REIMBURSEMENT	217
BALANCE ON HAND	13,728
PRICE ADJUSTMENT	-1,122
TOTAL	$ 50,896

RATION

TYPE OF PERSONNEL		S FED
NAVY (Enlisted)	18,938	3/ 12,499
TOTAL OTHER PERSONNEL	505	3/ 605
TOTAL RATIONS	19,543	3/ 13,104

COMPUTATION OF ALLOWANCES/FINANCIAL STATEMENT

TYPE		RATIONS	RATE	VALUE
BASIC ALLOWANCE		3/ 13,104	$ 2.67	$ 34,988
SPECIAL/SUPPLEMENTAL ALLOWANCES	100-149	13,104	.10	1,310
	SUBMARINES			
TOTAL ALLOWANCES				$ 36,298
STORES CONSUMED (From "EXPENDITURES")				35,441
OVER/UNDER ISSUE				$ 857

NOTES:
1/ Balance on hand previous report.
2/ Equals the sum of the 3 monthly "Ration and Sales Reports."
3/ Post "TOTAL RATIONS" figure from the "RATIONS FED" column.
Any remarks should be placed on the reverse side of this form.

The figures contained in the "RATIONS ALLOWED" column are correct to the best of my knowledge and belief.

EXECUTIVE/PERSONNEL (Date)

I CERTIFY that the above information is correct to the best of my knowledge and belief.

CERTIFIED BY (Signature) (Rank and Title) (Date)

ACTIVITY NAME, MAILING ADDRESS, AND UIC CODE MUST BE INSERTED

IF AT SEA DURING ENTIRE ACCOUNTING PERIOD INSERT A ZERO (0) IN THIS BLOCK

BEGINNING INVENTORY AT LAST RECEIPT PRICES

FIXED PRICES

LAST RECEIPT PRICES

ENDING INVENTORY AT LAST RECEIPT PRICES

INSURE THAT THE RATES USED ARE CURRENT WITH THE RATES PROMULGATED BY NAVFSSONOTE 7330 SERIES (FIXED PRICE LIST) FOR REPORTING PERIOD

SIGNATURE AND DATE INSERTED BY EXECUTIVE/PERSONNEL OFFICER

SIGNATURE AND DATE INSERTED BY COMMANDING OFFICER, OR FOOD SERVICE OFFICER IF SO DESIGNATED AS ACCOUNTABLE (SHIPS W/O SUPPLY CORPS OFFICERS)

SIGNATURE AND DATE INSERTED BY FOOD SERVICE OFFICER (SHIPS WITH SUPPLY CORPS OFFICERS)

48.113

Figure 4-15.—Enlisted Dining Facility Operating Statement (NavSup Form 1358).

NavSup Form 1358 caption	Substantiating document
Expenditures (all activities) continued	
	Expenditure Log (Loss without Survey) (NavSup Form 1334) for losses of food items expended without survey (original)
Transfers with reimbursement	Copy of Requisition and Invoice/Shipping Document (DD Form 1149) for each transfer action involving reimbursement
Transfers without reimbursement	Summary of transfers listing each activity by name and unit identification code, the value of each transfer and the total value of all transfers without reimbursement (original) (may be reported on a NavCompt Form 176)
Balance on hand	Inventory–Subsistence Report Semiperishable (NavSup Form 1059-1A), Subsistence Report Perishable (Frozen) (NavSup Form 1059-1B), and Subsistence Report Perishable (Chill) (NavSup Form 1059-1C) (copy) submitted only upon relief of the food service officer (commanding officer of ships without Supply Corps officers) and when an overissue occurs

All supporting documents should be legible. Any word or figure lacking complete legibility should be carefully inked in. Only the captions listed require submission of substantiating documents with the NAVSUP Form 1358.

DOCUMENTS RECEIVED AFTER RETURNS ARE SUBMITTED

Documents received after submission of the returns to which they relate and which do not require any adjustment will be forwarded with a letter of transmittal indicating the applicable accounting period and the name and unit identification code of the activity concerned.

Adjustment of Receipts Reported on Previous NAVSUP Form 1358.–If a corrected or adjusted receipt invoice is received after a return has been submitted, the difference between the amount previously reported and the corrected amount indicated on the adjusted invoice will be included opposite the applicable receipt caption on the current NAVSUP Form 1358. A copy of the corrected invoice will be submitted with the report in which adjustment is made. Exception to these procedures will be made only when it has been determined that inclusion of the adjustment in the current return would work to the disadvantage of the enlisted dining facility, such as the adjustment causing an overissue in the current return. When the latter occurs, a corrected return will be submitted for the period in which the erroneous receipt was previously reported.

Copy of Returns For Navy Supply Corps School

Approximately two weeks before graduation, officer students at the Naval Supply Corps School, Athens, Ga. receive their orders to duty in the fleet. During the last two weeks of the course, study is concentrated on the specific assignment to which they have been ordered. To provide up-to-date information with which to conduct this training, commands with Supply Corps officer personnel will forward via airmail to the Navy Supply Corps School, Athens, Ga. a copy of the NAVSUP Form 1358 for the accounting period ending 30 June.

RETENTION OF RECORDS AND DOCUMENTS

The food service officer will maintain files of accounting records and substantiating documents required for audit of subsistence, supply, and enlisted dining facility operations. Records and documents will be retained and disposed of in accordance with Disposal of Navy and Marine Corps Records (SECNAV Instruction P5212.5 Series).

ORIGINALS RETAINED

The following original records and documents will be retained:

1. Subsistence Ledger (NAVSUP Form 335)
2. Record of Receipts and Expenditures (NAVSUP Form 367)
3. General Mess Control Record (NAVSUP Form 338)
4. Subsistence Report Semiperishable (NAVSUP Form 1059-1A), Subsistence Report Perishable (Frozen) (NAVSUP Form 1059-1B), and Subsistence Report Perishable (Chill) (NAVSUP Form 1059-C)
5. Subsistence Requisition Document (Perishable-Frozen) (NAVSUP Form 1059A), Subsistence Requisition Document (Perishable-Chill) (NAVSUP Form 1050B), Subsistence Requisition Document (Perishable-Frozen/Chill) (NAVSUP Form 1059C), and Subsistence-item Request/Issue Document (NAVSUP Form 1282) (issue documents supporting sales to private dining facilities and issues for special meals)
6. Special-Meal Request/Receipt (NAVSUP Form 340)
7. Monthly Recapitulation of Meal Record (NAVSUP Form 1292)
8. Ration and Sales Report (NAVSUP Form 1357)

COPIES RETAINED

Copies of the following documents will be retained:

1. Enlisted Dining Facility Operating Statement (NAVSUP Form 1358)
2. NAVSUP Forms 1059-1A, -1B, and -1C (recapitulation of issues to the enlisted dining facility)
3. Each receipt document for the accounting period stapled with an adding machine tape confirming the total
4. Each expenditure document for the accounting period for which an original is not retained, all expenditure documents will be stapled with an adding machine tape confirming the total
5. Special Meals Report (NAVSUP Form 1340)
6. Expenditure Log (Loss without Survey) (NAVSUP Form 1334)

PROCUREMENT OF SUBSISTENCE ITEMS BY PRIVATE DINING FACILITIES

This section discusses procurement and storage of food items used in the wardroom, including the determination of requirements, and the preparation of requisitions and purchase orders. Where there are significant differences between afloat and ashore procedures, both methods are described. You may have responsibilites in one or more of these areas, and it is important for you to know how the tasks are performed and why they are necessary.

METHOD OF PROCUREMENT

Private dining facilities may procure food from any available source. The choice is based on price, quality, and availability of the desired items. Available sources are enlisted dining facilities, commissary stores, and commercial suppliers—either retail or wholesale. Actually, all procurement is by purchase. Even those items drawn from the enlisted dining facility, since they are paid for at the end of the month by cash from wardroom funds, are considered to be purchases.

SOURCES OF PROCUREMENT

As was stated earlier, private dining facilities may choose the supply source that best fits their needs.

Enlisted Dining Facility

The enlisted dining facility is the major supply source afloat and may be used extensively ashore. Food items may be purchased from the enlisted dining facility when, in the opinion of the supply officer, the sale will not unduly restrict quantity or quality available for issue to the enlisted dining facility. Items purchased from this source are usually less expensive, are of uniform quality, and can be used with a minimum of waste.

Commerical Suppliers

Commercial suppliers, including commissary stores, are relied on to provide those items which are not available from the enlisted dining facility.

ESTIMATING REQUIREMENTS

Estimating requirements ashore requires less advance planning than it does afloat because you are always near a source of supply. Therefore, it is necessary to anticipate needs only a few days in advance to give you enough time to purchase the items needed. Much more planning is necessary for an afloat dining facility since the ship may operate for weeks away from any supply source except its own storerooms.

Requirements for Enlisted Dining Facility

The supply officer is responsible for loading a sufficient quantity and range of food items to take care of the enlisted dining facility requirements. Since he considers past usage when estimating his requirements, he also provides for anticipated sales to private dining facilities. However, any unusual requirements should be reported to the SO so that he can adjust his orders accordingly.

Some food items are available through the Navy supply system that are not authorized for use in the enlisted dining facility or are limited to certain ships. Because many of them are packaged in smaller containers, they are often more convenient to use in the wardroom than the larger packs used by the enlisted dining facility. The supply officer can order these items by placing the statement "For sale to private dining facilities" on the requisition. However, they must be used by those facilities and may not be returned for credit. Your requirements for these items must be estimated very carefully.

You should have a list of all items regularly stocked in the enlisted dining facility storerooms so that you will know which items are normally available and which items require advance planning on your part.

Commercial Sources

Requirements for the items to be purchased from commercial suppliers or commissary stores must be carefully estimated and must be based on the type of operation, storage facilities available, and the cost. Orders for perishable items should be limited to those which can be consumed during their normal storage life. The type and quantity of items that can be purchased may also be limited by the amount of money available to the treasurer.

Type of Operation

Such factors as the length of the cruise and climate to be encountered will have a definite influence on the type and quantity of items required. Fresh foods will only keep so long, and then you must rely on dry and frozen items. The climate will determine the type and quantity of food served. Cold weather requires more substantial meals and larger portions. When the weather is hot, you will want to serve lighter meals and smaller portions.

Usage Data

Any records concerning the dining facility will provide data that are useful for estimating needs. For example, old menus and records of purchases will indicate which foods are preferred and their rate of use.

Menus

While you probably will not be preparing menus, they are helpful in estimating requirements. They must be relied on if special meals are planned which will require items not normally used. When the Armed Forces Recipe Service recipes apply to your menus, you can accurately estimate the amounts of each food item needed for the period covered by the menus. By using the formula conversion method described in chapter 8, you can determine the proportional amounts needed for each menu, and thus estimate the amounts of each items needed by the mess for the cruise.

Storage Facilities

The amount of storage space you have available must be considered when you are estimating requirements. When lack of refrigerated storage space limits the amount of perishable items you can stock, you will have to depend more on semiperishable foods.

In addition to refrigeration equipment discussed in Chapter 5, most wardrooms have storeroom space for perishable and semiperishable foods. On large ships, these may be separate storerooms. On other ships, there is usually a space in the enlisted dining facility storerooms which is designated for use by the wardroom.

PURCHASES FROM THE ENLISTED DINING FACILITY

Most of the food items you will use afloat are purchased from the enlisted dining facility. Officers' dining facilities ashore usually have sufficient storage space so that purchases may be made weekly. However, refrigerated and dry storage space aboard ship is limited, and you will probably draw perishable and semiperishable foods daily. The following forms, some of which have been discussed earlier, are used for requisitioning food items:

NAVSUP Form 1282 Subsistence-Item Request/Issue Document
NAVSUP Form 1059-1A Subsistence Report (Semiperishable)
NAVSUP Form 1059-1B Subsistence Report (Perishable-Frozen)
DD Form 1149 Requisition and Invoice/Shipping Document

The supply officer will designate which forms are to be used and the time that food items may be drawn. The NAVSUP Form 1282 is generally used except when large quantities of items are needed, in which case the appropriate NAVSUP Form 1059 may be used. Figure 4-8 shows the NAVSUP Form 1282 as it would appear following an issue, the NAVSUP Form 1059 was discussed earlier in this chapter.

Purchase Procedure

Generally, the steps in requesting food items are as follows:

1. Prepare the issue request, NAVSUP Form 1282, in triplicate (original and two copies) indicating the items and quantities required.
2. Present the form to the treasurer, or the authorized representative. All requests for food items must be serialized, and a log book is maintained for this purpose. All requests are logged, and the next successive number is assigned. This ensures that all documents are accounted for, and the treasurer can keep a cumulative total of all purchases from the enlisted dining facility for the month. The treasurer then signs the form indicating his approval.
3. Take the signed form to the food service officer. The food service officer signs, indicating his approval of the sale, after the items have been priced and totaled.
4. The approved form is then presented to the storeroom custodian. The storeroom custodian will issue the requested items, indicate the quantity issued on the form, and sign the "Issued by" block. You will sign in the "Received by" block.
5. The storeroom custodian gives the duplicate copy of the request to you, and it should be returned to the treasurer. The original and triplicate copy are retained for posting to the food service records and for use in the preparation of the monthly statement of cash sales which is paid by the treasurer.

Cost of Food Purchases from Enlisted Dining Facility

The wardroom pays monthly for food purchased from the enlisted dining facility. The cost of most items is computed on the basis of the last receipt unit price, which is the unit price taken from the receipt invoice covering the last shipment of an item. Certain cuts of meats and galley produced bakery products are the exceptions to this pricing method, and they are discussed below.

Meats—Veal is ordered and received in a standard unit which consists of various categories of cuts of meat. The categories and the percentage of each that make up the total unit pack are shown below. The unit price of these meats is based on the cost of all categories and stated as cost-per-pound. Private dining facilities may purchase individual categories provided the enlisted dining facility can use the unbalanced portions of complete units. The prices of the individual categories are based on the value and demand of the item and are computed by using the last receipt price and the "Percent of Unit for Sale" column in the following tables.

Veal, Boneless, 3-way

Category	Percent of Unit	Percent of Unit Price For Sale
Slices	37 (minimum)	135
Roasts	25 (minimum)	130
Ground.....	38 (maximum)	50

Using a last receipt price of $0.90 per pound for Veal, Boneless, 3-way, and the table above, the sale price of individual categories would be computed as follows:

Veal slices	$0.90 x 135%	unit price (from above table)
	$1.2050	(selling price per pound is rounded off to $1.21)
Veal roasts	$0.90 x 130%	unit price
	$1.1700	(selling price per pound)
Ground veal	$0.90 x 50%	unit price
	$0.4500	(selling price per pound)

In all computations, the price is rounded off to the nearest cent.

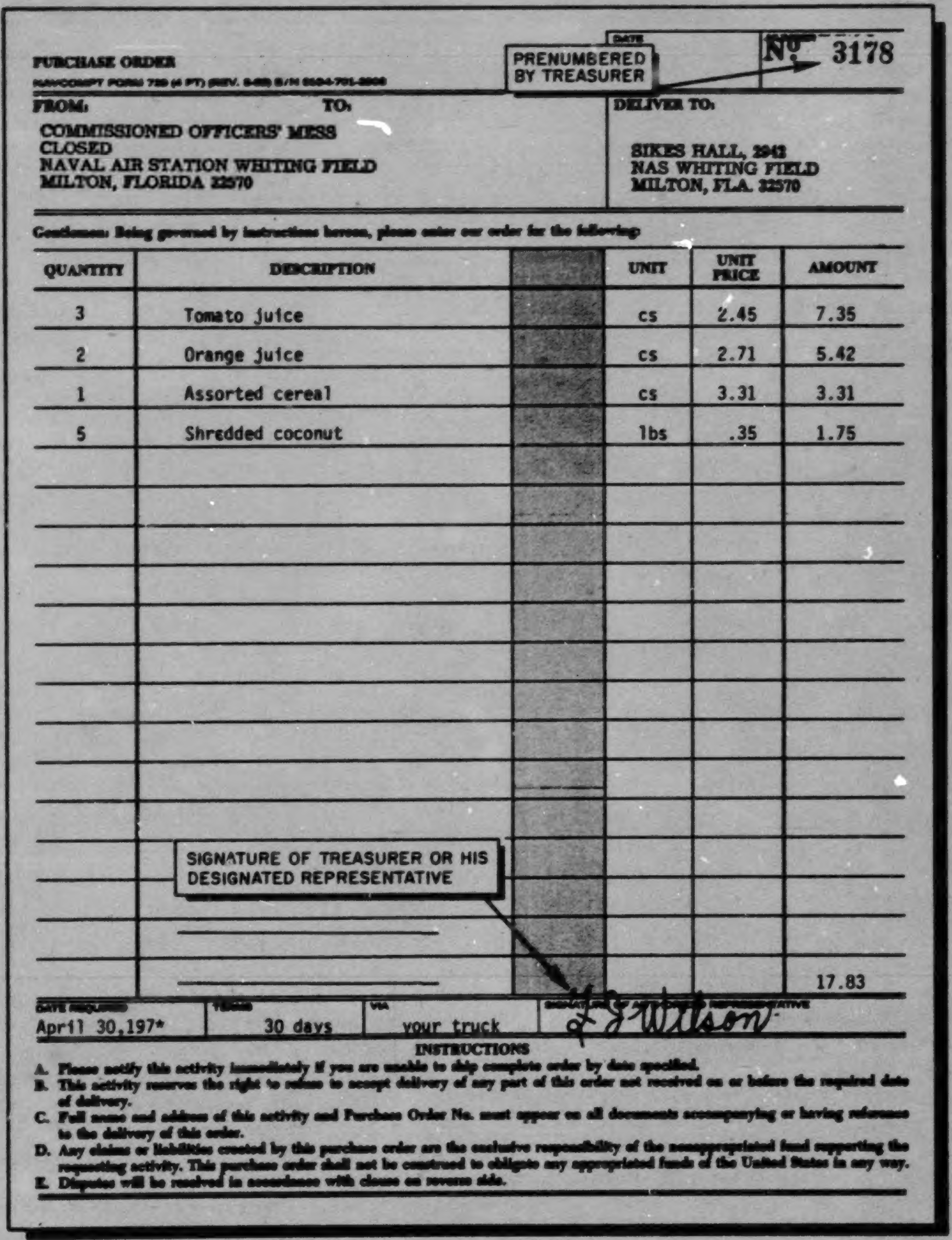
Bakery Products—Many private dining facilities have limited baking facilities and must purchase most of the bakery products that they use. Usually, these purchases afloat are from the enlisted dining facilities. The Navy Food Service Systems Office publishes a price list of galley produced bakery products. The list includes the item, the unit of issue, and the price per unit and applies to all bakery items which have been produced aboard ship.

When it is necessary for the enlisted dining facility to purchase bakery products for their own use rather than produce them, they are sold to the wardroom at the last receipt price rather than at the price mentioned above.

PURCHASES FROM COMMERCIAL SOURCES

Private dining facility may purchase food items from any commercial supplier. This includes wholesalers, supermarkets, commissary stores, and specialty shops. Afloat, private dining facilities usually rely on commercial suppliers for items which are not carried in enlisted dining facility storerooms. These items are sometimes required for special meals, to provide a greater variety in menu planning. Dining facilities ashore generally purchase the major portion of their food requirements from commercial sources.

The treasurer or his designated representative is responsible for all purchases



PURCHASE ORDER
NAVCOMPT FORM 739 (4 PT) (REV. 8-69) S/N 0104-701-3906

PRENUMBERED BY TREASURER

DATE

No. 3178

FROM: TO:

COMMISSIONED OFFICERS' MESS
CLOSED
NAVAL AIR STATION WHITING FIELD
MILTON, FLORIDA 32570

DELIVER TO:

SIKES HALL, 2943
NAS WHITING FIELD
MILTON, FLA. 32570

Gentlemen: Being governed by instructions hereon, please enter our order for the following:

QUANTITY	DESCRIPTION		UNIT	UNIT PRICE	AMOUNT
3	Tomato juice		cs	2.45	7.35
2	Orange juice		cs	2.71	5.42
1	Assorted cereal		cs	3.31	3.31
5	Shredded coconut		lbs	.35	1.75
					17.83

SIGNATURE OF TREASURER OR HIS DESIGNATED REPRESENTATIVE

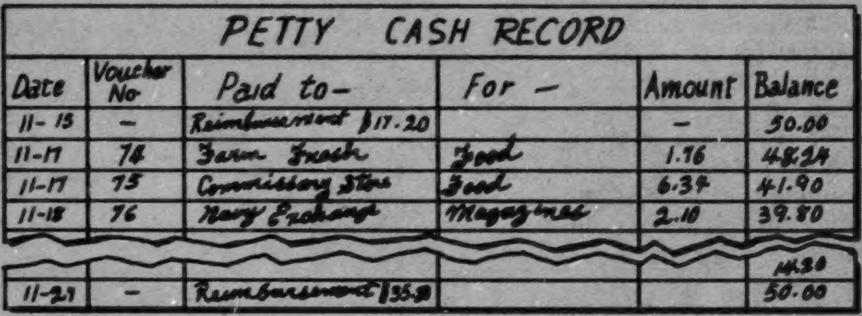
DATE REQUIRED	TERMS	VIA	SIGNATURE OF AUTHORIZED REPRESENTATIVE
April 30,197*	30 days	your truck	L J Wilson

INSTRUCTIONS

A. Please notify this activity immediately if you are unable to ship complete order by date specified.
B. This activity reserves the right to refuse to accept delivery of any part of this order not received on or before the required date of delivery.
C. Full name and address of this activity and Purchase Order No. must appear on all documents accompanying or having reference to the delivery of this order.
D. Any claims or liabilities created by this purchase order are the exclusive responsibility of the nonappropriated fund supporting the requesting activity. This purchase order shall not be construed to obligate any appropriated funds of the United States in any way.
E. Disputes will be resolved in accordance with clause on reverse side.

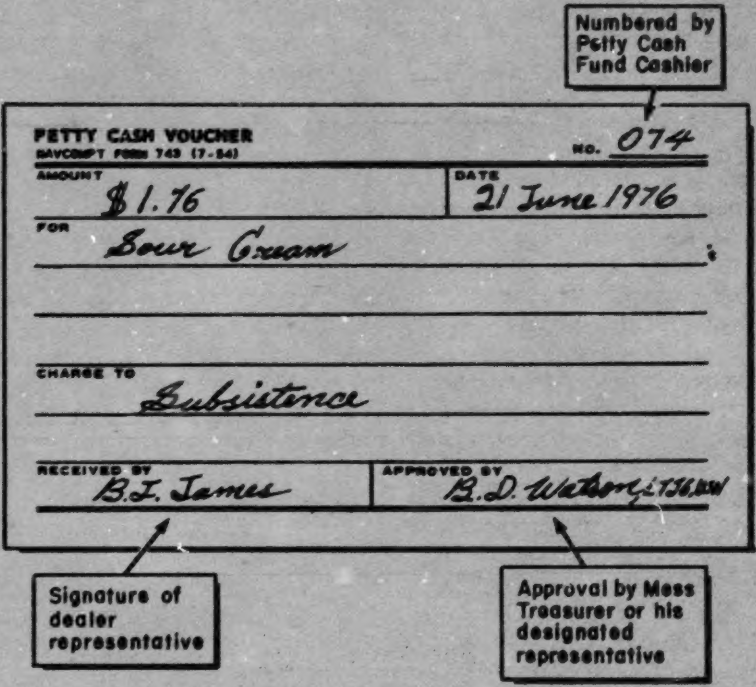
48.114

Figure 4-16.—Purchase Order (NavCompt Form 739).



PETTY CASH RECORD

Date	Voucher No	Paid to—	For —	Amount	Balance
11-15	—	Reimbursement $17.20		—	50.00
11-17	74	Farm Fresh	Food	1.76	48.24
11-17	75	Commissary Store	Food	6.34	41.90
11-18	76	Navy Exchange	Magazines	2.10	39.80
					14.20
11-27	—	Reimbursement $35.80			50.00



Numbered by Petty Cash Fund Cashier

PETTY CASH VOUCHER
NAVCOMPT FORM 743 (7-54)

NO. 074

AMOUNT $1.76

DATE 21 June 1976

FOR Sour Cream

CHARGE TO Subsistence

RECEIVED BY B.J. James

APPROVED BY B.D. Watson, LTJG USN

Signature of dealer representative

Approval by Mess Treasurer or his designated representative

48.115

Figure 4-17.—Petty Cash Voucher (NavCompt Form 743).

made for the wardroom. The treasurer usually compiles a list of dealers, and purchases should be made from these sources.

Unlike foods which are purchased from the enlisted dining facility, items purchased locally may require inspection by the medical department to ensure that they are fit for human consumption.

Purchases within the United States generally do not present any problems since food production is monitored by Federal, state, and local health authorities. However, all items should conform to the standards discussed earlier in the chapter.

Purchases which are made in foreign ports may present different problems. Restrictions and guidelines for these purchases are usually distributed by type commanders or by SOPA. Purchased items must be thoroughly inspected to prevent the introduction of food-borne illness or infection.

Purchase Orders

A Purchase Order, NAVCOMPT Form 739 (Figure 4-16) should be issued for all purhcases made from commercial sources, except small purchases made from the petty cash fund. These small purchases are documented on a NAVCOMPT Form 743 (Figure 4-17). When repetitive purchases are made from one dealer, a blanket purchase order may be issued weekly or monthly to cover all purchases made during the period.

Officers' dining facilities ashore participating under the Bupers Centralized Accounting System use a purchase order, NAVCOMPT Form 2213.

The NAVCOMPT Form 739 consists of an original and three multi-colored copies and is prenumbered by the treasurer or his designated representative. All forms must be accounted for. The original of the purchase order is given to the dealer, and the copies are distributed and filed as directed by the treasurer.

A completed purchase order is shown in Figure 4-16.

Cash Purchases

It is not necessary to prepare a purchase order for every small purchase action. When small amounts of items are needed, it is usually more convenient to handle them as cash purchases. Examples of cash purchases are: items purchased at supermarkets or commissary stores and telephone orders for same-day delivery. In such cases payment is made at time of delivery. Officers' dining facilities usually establish a petty cash fund for this purpose. When the volume of cash purchases is relatively small, the treasurer may advance funds for each purchase rather than establish a petty cash fund. In either case, the person making the purchase must obtain a sales slip or receipt. In addition, a Petty Cash Voucher, NAVCOMPT Form 743, must be prepared and signed for all petty cash purchases as shown in Figure 4-17.

SUMMARY OF FORMS DISCUSSED

Form No.	Title	Use
DD Form 1149	Requisition and Invoice/ Shipping Document	To requisition and invoice between ships, expenditure document for sales and losses; transfer accountability.
DD Form 1348	DOD Single Line Item Requisition System Document (Manual)	To requisition subsistence items from supply activities and other ships.
DD Form 1348m	DOD Single Line Item Requisition System Document (Mechanical)	To submit partially prepunched requisitions to supply activities.

SUMMARY OF FORMS DISCUSSED

Form No.	Title	Use
DD Form 1348-1	DOD Single Line Item Release/Receipt Document	Receipt and transfer document for subsistence items.
NAVSUP Form 48	Order and Inspection Report	To order subsistence items available under local contracts.
NAVSUP Form 209	Stock Tally	To provide quantity and location data for items in the storeroom and issueroom. Use is optional.
NAVSUP F[illegible] 335	Subsistence Ledger	To provide inventory control information on all subsistence items stocked.
NAVSUP Form 338	General Mess Control Record	To provide a cumulative control of allowed rations and cost of subsistence items consumed in the general mess.
NAVSUP Form 367	Record of Receipts and Expenditures	To provide a control over the money value of subsistence items received and expended.
NAVSUP Form 1059-1A	Subsistence Report (Semi-Perishable)	1059 is a requisition and as a requisition worksheet is used to: report issues to enlisted dining facilities; authorize breakouts from bulk storeroom to issueroom; report items sold to private dining facilities; record and report inventory of subsistence item; recap inventory adjustments; and to report total consumption in the enlisted dining facility for the reporting period.
NAVSUP Form 1059-1B	Subsistence Report (perishable-Frozen)	
NAVSUP Form 1059-1C	Subsistence Report (Perishable-Chill)	
NAVSUP Form 1282	Subsistence Item Requisition/ Issue Document	To report issues to the general mess and sales to private messes.
NAVSUP Form 1336	Requisition Log	To itemize disposition of requisitions.
NAVCOMPT Form 739	Purchase Order (Afloat)	
NAVCOMPT Form 2213	Purchase Order (Ashore)	
NAVCOMPT Form 743	Expenditure Voucher	
NAVCOMPT Form 742		

REFERENCES

Publication	Information pertaining to
Food Service Management NAVSUP P-486	Food service operations and reports.
Federal Supply Catalog, Group 89, Subsistence	Stock identification and requisitioning information for subsistence items.

CHAPTER 5

FOOD SERVICE EQUIPMENT

The food service equipment located in the galley and dining areas at naval shore stations and aboard Navy ships is designed specifically for serving large quantities of food. In order to ensure the safe, sanitary, and efficient operation of this equipment, it must be maintained in proper working order and used properly.

GALLEY EQUIPMENT

Galley equipment is used for the cooking and preparation of food and the cleaning of utensils and dinnerware. This consists of all equipment located in the different food service spaces such as the galley, bake shop, vegetable preparation room, meat preparation room, dining areas, officer's pantry, and scullery.

ELECTRIC RANGES

Electric ranges used in the Navy are of the following types: (1) Type A. Three surface units and one oven; (2) Type B. One surface unit and one oven; (3) Type C. Two surface units and one oven; and (4) Type S. Griddle, three-section hotplate, and a two-compartment oven (Figure 5-1). For instructions in operation and maintenance of the ovens, see electric roasting ovens.

Type A Ranges

Surface units of older models have one of the following arrangements:

1. Three hotplates, each controlled by one three-heat switch or two single-heat switches.
2. Three griddles, each controlled by a three-heat switch and a thermostat.
3. Combinations of hot plates and griddles.

The newer models of type A ranges are equipped with three combination griddle-hotplates, each controlled by one thermostatic switch having a temperature range from 250°F to 850°F.

Type B Ranges

Older models of type B ranges have a combination griddle-hotplate which is controlled either by one three-heat switch or by two single-heat switches.

The newer models of type B ranges are equipped with one thermostatic switch having a temperature range from 250°F to 850°F.

Although the type B range has been phased out, there may still be a few in operation.

Type C Ranges

The type C range has two combination griddle-hotplates. On the older models the surface units are controlled by either one or two three-heat switches.

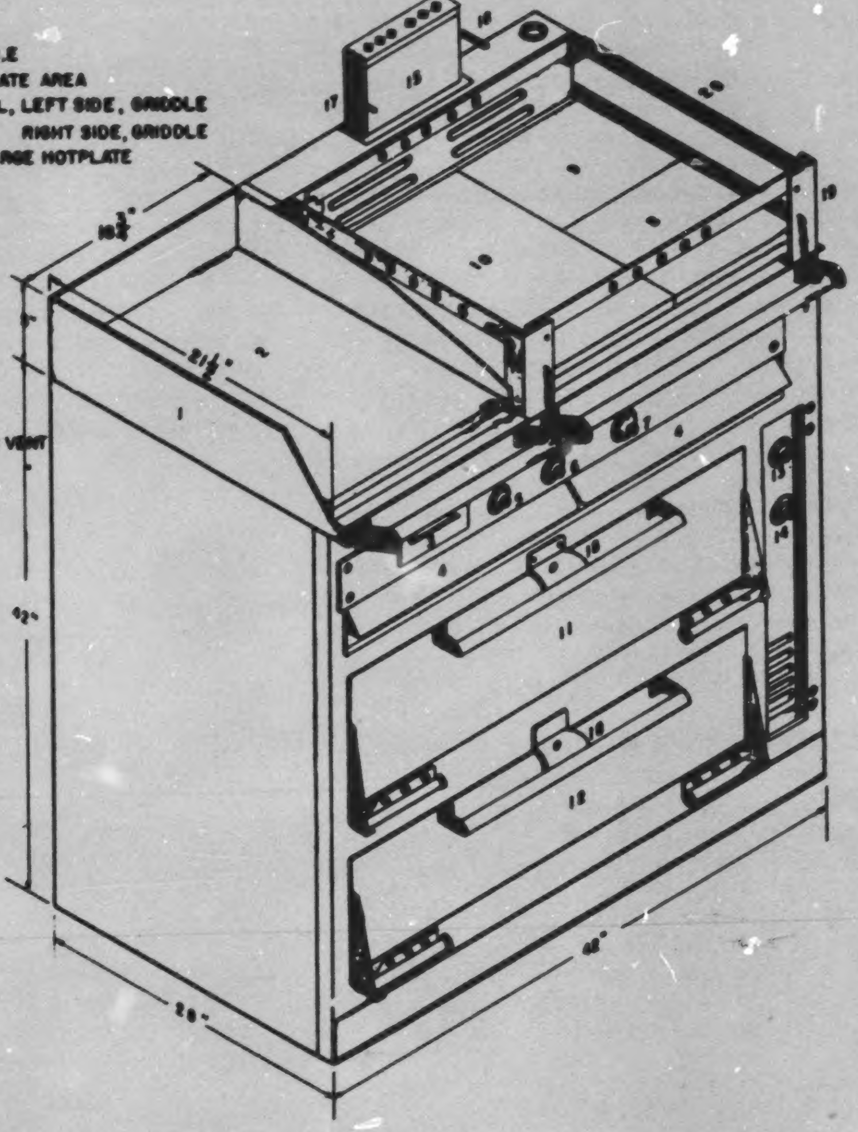
On the newer models the surface units are controlled by one thermostatic switch having a temperature range from 250°F to 850°F.

Type S Ranges

The type S range was developed for submarine galley use and replaces the type B range. All the cooking, except deepfat frying and coffee making, can be accomplished on one type S range. One of these ranges occupies the

NOMENCLATURE

1 SPLASH GUARD FOR GRIDDLE
2 GRIDDLE
3 GREASE RECEPTACLE; GRIDDLE
4 DRIP PANS, GRIDDLE; HOTPLATE AREA
5 THERMOSTATIC CONTROL DIAL, LEFT SIDE, GRIDDLE
6 " " " RIGHT SIDE, GRIDDLE
7 THERMOSTATIC CONTROL, LARGE HOTPLATE
8 SMALL HOTPLATE, FRONT
9 SMALL HOTPLATE, REAR
10 LARGE HOTPLATE
11 TOP OVEN
12 BOTTOM OVEN
13 THERMOSTAT DIAL CONTROL FOR TOP OVEN
14 THERMOSTAT DIAL CONTROL FOR BOTTOM OVEN
15 OVEN VENT
16 DAMPER CONTROL, TOP OVEN VENT
17 " " BOTTOM " "
18 OVEN DOOR RELEASE
19 SEA RAIL SUPPORT
20 SEA RAIL



48.8

Figure 5-1.—Type S Electric Range.

same amount of deck space as two type B ranges. The food production capacity of one type S range, however, is considerably more than twice that of the two type B ranges. The type S range permits faster and more uniform cooking and enables several sections to be used interchangeably.

A compact galley unit, the type S range consists of three separate cooking sections. The top has a griddle on the left side and a three section hotplate area on the right. A two-compartment oven section, one above the other compartment, makes up the body of the range. Dial temperature control switches are mounted on the body directly adjacent to each section. A separately mounted panel (usually bulkhead mounted) contains additional three-heat switches for use in operating the ovens and the small hotplates.

The overall dimensions of the range are 42 inches wide (including the guard rail), 28 inches deep, and 42 inches high (to the top of the heating surfaces).

These type S ranges are now in the process of being phased out of the system. Replacing them are small steam-jacketed kettles, steam cookers, and a separate 3-foot griddle (these are discussed later in the chapter).

Operation of Surface Units

Use the switch or thermostat setting at maximum heat only to heat food to cooking temperature or to bring water to boil, then reduce the switch or thermostat setting to the heat required by the food being cooked. Using more heat than necessary is not only a waste of power but produces inferior food. DO NOT leave the surface units turned on when not in use. When steaming food, keep utensils covered. The food will stick and burn if left uncovered, and power will be wasted.

Care and Cleaning

Keep the range surface units clean, and avoid spilling grease under the edges of the hotplates. The spaces around the surface units should be scraped clean. Remove and clean drip pans every day. Clean the range thoroughly once a week or more often if possible. The griddle hotplate type surface units can be satisfactorily cleaned by using pumice stone blocks. Use only soap and water on enameled surfaces. Although a detergent solution is preferable, powdered cleansers may be used on polished steel areas.

Grease filters and hoods located over galley ranges should be kept free from an excessive amount of grease. Wash the filters as often as necessary but at least once a week. The hoods should be wiped and washed as necessary, making sure to remember the ledge underneath the edge of the hood.

Wash the filters in hot soapy water in the deep sink to remove most of the grease. Then, rewash in the dishwashing machine. The preliminary washing in the deep sink will avoid an accumulation of residue in the dishwashing machine.

ELECTRIC ROASTING OVEN

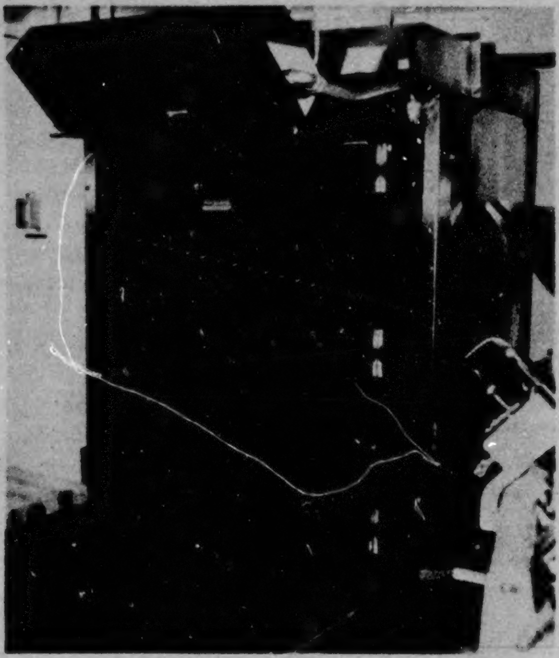
The Navy uses four sizes of electric ovens (see Figure 5-2 for a typical oven) as indicated in the following table.

Oven Type	No. of Compartments	Capacity (lbs of meat)
60	2	120
60	3	180
125	2	250
125	3	375

Each oven section is provided with two heating units, one located at the top of the compartment and the other underneath the deck. Each heating unit is controlled by a separate three-heat switch, and the temperature of each section is regulated by a thermostat.

Operating Instructions

The oven should be preheated before it is used by turning both upper and lower units to "high" until the desired temperature is reached. Then, the thermostat control will automatically cut off the current and will supply only enough heat to keep the temperature constant. After the oven has been heated, set the two three-heat



48.9

Figure 5-2.—Electric Oven.

oven switches at the "top" and "bottom" heat necessary to bake the product. In roasting meat, avoid spilling grease on the heating elements or thermostats, as damage to this equipment may result.

Care of Roasting Ovens

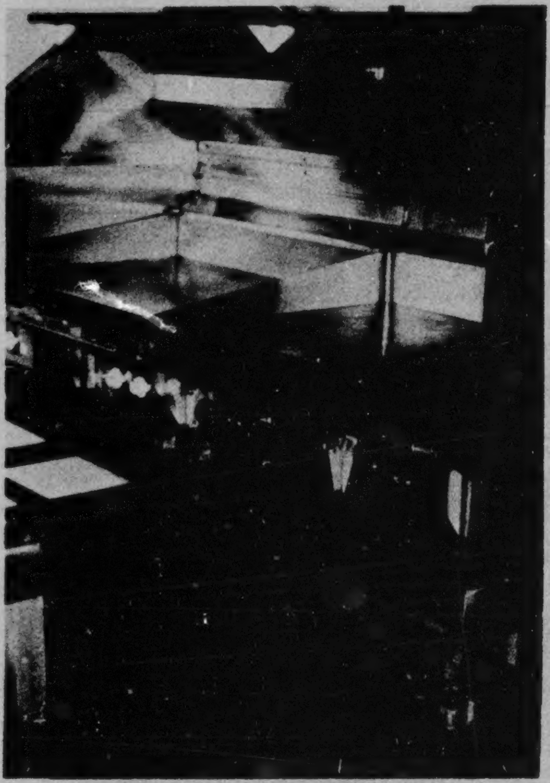
To prevent the accumulation of foreign material, you should clean the oven thoroughly at least once a week in addition to the normal daily cleaning. Keep door edges clean. Crusty deposits prevent proper closing of doors causing not only loss of heat but also corrosion by the escape of steam and fumes. Use the damper lever (located above the thermostat) to prevent smoke and steam from escaping around the oven door. Do not throw water in the oven to cool it or to wash it. When cleaning the oven with a wet rag, wring the rag out thoroughly.

ELECTRIC GRIDDLES

Description

The older griddle is surrounded by a grease trough, which drains into a receptacle. The body is mounted on a four-leg stand with an undershelf. A griddle guard, consisting of a rectangular bottomless frame and cover, is furnished for certain types of frying such as the preparation of home fried potatoes.

The heating element of the griddle is divided into two sections. On the older models, the heating element is controlled by a three-heat switch. The newer griddles (Figure 5-3) consist of cooking surfaces of various sizes up to 34" deep by 72" wide. Each has a readily removable



48.10

Figure 5-3.—Electric Griddle.

grease receptacle in the front of the griddle and a splash guard at least 3 inches high at the rear of griddle and tapered at the sides. All switches and thermostats are conveniently located on the front panel. Each thermostat switch has a signal light and a temperature range of 200°F minimum to 550°F maximum.

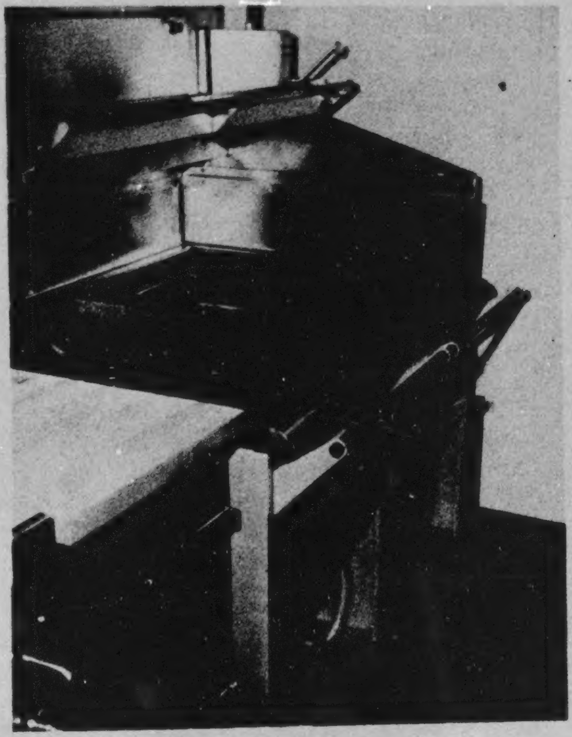
Operation

To operate an electric griddle, turn the control switch to high heat for 15 minutes, then to the temperature desired, medium heat or low heat, in accordance with the recipe. Use the griddle guard when necessary to keep food from sliding off the cooking surface. There are certain cuts of meat that can be grilled in the frozen or half frozen state such as beef boneless, grill steaks, tempered (AFRS 2-7). However, for the satisfactory operation of the griddles, it is recommended that all items to be grilled be completely thawed. Pork products should never be grilled in the frozen or partially frozen state.

Care and Cleaning

Keep the cooking surface scraped and wiped clean at all times. The grease gutters should always be kept clean to facilitate draining off excess grease and thereby reducing smoke. The grease receptacle should be emptied frequently and thoroughly cleaned at the end of the working day.

The cooking surface can be satisfactorily cleaned with a pumice stone. Never use water. If pumice stone is not available, periodically place a cloth dampened with ordinary household ammonia on the surface when the plate is cold and allow it to remain from 4 to 5 hours. The ammonia will soften the carbon so that it is easily removed with a cloth. You must be very careful during this operation to prevent the ammonia from entering sections containing electric wiring or other electric parts, as the ammonia will destroy insulating materials. All traces of ammonia odor will disappear as the grids are heated.



48.11

Figure 5-4.—Deep-fat Fyer.

DEEP-FAT FRYERS

Description

The Navy uses three sizes of deep-fat fryers. They are types 23, 51, and 90. The type numbers represent the approximate number of pounds of french fried potatoes which may be prepared per hour.

Deep-fat fryers (Figure 5-4) are heated by the immersion of electric heaters located at such a level that the portion of the fat below the heater remains comparatively cool. This allows all the sediment from the frying food to settle to the bottom of the fat container without being burned. Heating elements are controlled by a magnetic controller and a thermostat to maintain the fat at the desired temperature.

Operation

Before filling the deep-fat fryer always check three things:

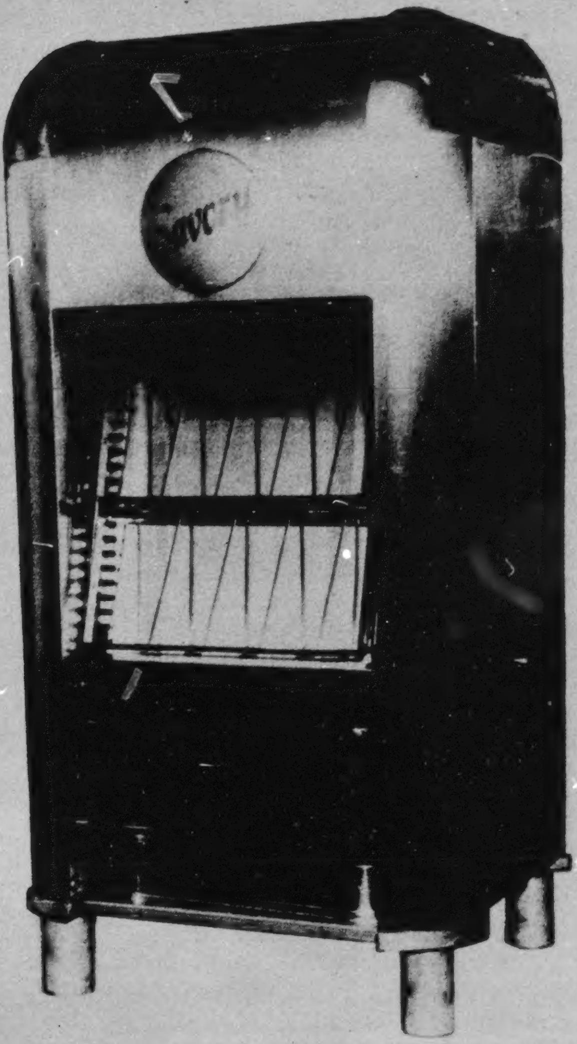
1. Master switch must be in the off position.
2. Thermostatic switch must be in the off position on the fryer.
3. Drain valve must be closed tightly.

Fill the fryer with fat using the amount specified in the technical manual furnished with the fryer. Fats should be kept at least 2 inches below the fryer top. If possible, the fat should be heated and melted before placing it in the fry kettle. Cold solid fat may have moisture pockets which will explode, casting hot melted fat over a wide area. Temperature should be no more than 200°F while the fat is melting. Also, if the cold fat is not uniformly distributed around the heating element, the bare portions may heat up to a point where a sudden splash of fat on the over-heated element will cause the fat to ignite. The fat should cover the uppermost coil at all times when the deep-fat fryer is in operation so as not to overheat the element and cause a fire. After the fat has been added, operate the deep-fat fryer as follows:

1. Turn on the master switch located outside the galley.
2. Set the thermostat at the cooking temperature prescribed in the ARMED FORCES RECIPE SERVICE for the recipe you are using.
3. Check the temperature of the fat with a hand thermometer frequently during the cooking process. Compare this hand reading with the thermostat reading to determine if the thermostat is accurate. The temperature should never, under any circumstances, go above 400°F. A safety requirement on all Navy fryers includes a second or over temperature thermostat. This is a nonadjustable, manual, resetting type installed to limit maximum temperature not to exceed 460°F. In case of failure of the adjustable automatic thermostat, the overtemperature thermostat disconnects the electric power to the heater elements.
4. Have foods as free from moisture as possible before frying. Excess moisture causes the fat to foam, sputter, and boil over. It also causes fats to break down, and their useful life is shortened.
5. Do not fry bacon in the deep-fat fryer, as the fat from the bacon causes the fat level to rise above the safe level. It also contains salt which will shorten the life of the fat.
6. Follow instructions furnished with the fryer. Do not exceed the capacity of the fryer indicated on the instruction plate.
7. Guard against fire. If a fire should occur in the deep-fat fryer, secure the power on the master switchboard and notify the Officer of the Deck immediately. Use the Purple K fire extinguisher, designed to extinguish grease fires, or smother the fire with the metal cover for the deep-fat fryer. Keep the cover on until the fryer has cooled below the ignition temperature. Do not remove the cover until damage control officer has given his permission.
8. When the fryer is not in use, keep both the switch on the fryer and the master switch in the OFF position.
9. When personnel are available there should be two people in the galley during operation of the deep-fat fryer.
10. NEVER leave the deep-fat fryer unattended while it is in operation.
11. NEVER operate near unguarded electric sockets, sparks, or flames.
12. NEVER let the fat level fall below the point marked in the fat container.

Cleaning of Deep-Fat Fryers

Each fryer should be cleaned after each use. Before you clean the deep-fat fryer, turn off the heating element and allow the fat to cool to about 150°F. Drain the fat out of the fryer. Then remove the basket support screen, scrape off oxidized fat from the sides of the kettle with a spatula or scraper, and flush down the sediment with a small amount of fat. If the kettle has become very dirty, fill it to the fat level with hot water containing dishwashing machine detergent. Turn on the heating element and allow the water to come to a boil. Boil the water for at least 5 to 10 minutes, turn off the heating element, drain, rinse with warm vinegar water, then rinse thoroughly with clear water, and dry the fryer well. Clean the outside of the fry kettle with a grease solvent. DO NOT leave heating elements turned on when the deep-fat



48.17

Figure 5-5.—Continuous Type Electric Toaster.

fryer is empty. This will burn out the heating element.

ELECTRIC TOASTERS

Description

Electric toasters used are the intermittent and the continuous types (Figure 5-5). The intermittent type is composed of chromeplated steel and has a vertical oven with from 2 to 4 top openings for inserting the bread slices. The continuous type has a chromeplated heavy duty conveyor with motor driven revolving trays for the toast.

Cleaning

The accumulation of crumbs will emit an offensive odor, will be unsanitary, and will cause heating elements to burn out prematurely. Before cleaning a toaster, be certain that the electric power is off. Then brush crumbs out of the heating element. If the toaster is a continuous type, the conveyor must also be cleaned. Clean the metal surfaces of the toasters with a silver-dip solution at least once a week in order to keep them clean and bright.

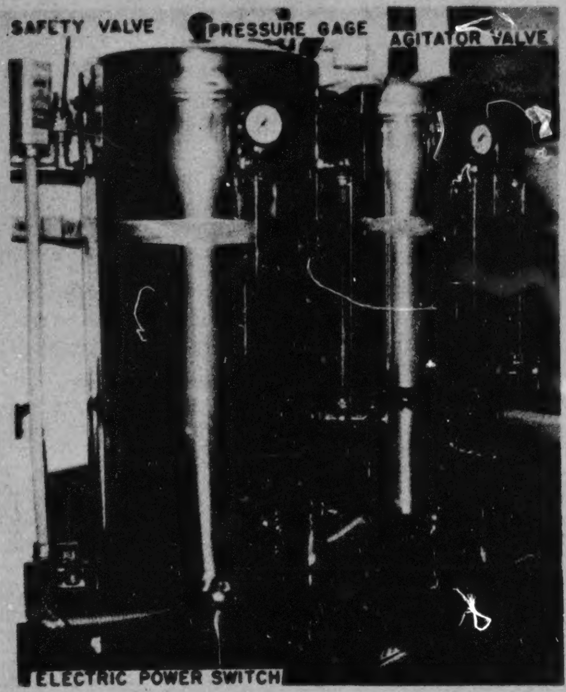
COFFEE URNS

Coffee urns used in the Navy dining facilities may be heated either by electricity or by steam.

Description

The combination-type electric urn (Figure 5-6), consists of an inner compartment or tank for coffee and an outer pressure-tight tank for water. The two tanks are separated by an air space to avoid rapid temperature changes of coffee when cold water is added to the water tank. A siphon pipe between the water and the spray head in the urn cover or lid forces the hot water up and sprays it over the ground coffee in the leacher. An agitating valve is provided for thoroughly mixing the coffee in the coffee tank instead of drawing it off by hand and pouring the coffee back into the urn.

Steam heated coffee urns are similar to electric urns in construction. The basic difference is that a steam coil, installed in the bottom of the water tank, provides the heat for these urns. Electricity is required to operate the pressure-type controls used on all but the 1-gallon urn to maintain the required temperatures. Operating and cleaning instructions are the same as for the electrically heated urns.



48.14

Figure 5-6.—Electric Coffee Urns.

The urns furnished for making coffee are the 1-gallon (nonautomatic urn which requires hand pouring), the 2-gallon, and the 4-gallon urns. Electric immersion heaters are installed for heating the urns, and pressure type controls are provided for automatic temperature control.

Urn bags (leacher cloths) are made of unbleached muslin. When manufactured they are treated with sizing (mainly starch). Before a new urn bag is used, it should be soaked in hot water and wrung out to remove as much sizing as possible. If this is not done, the hot water poured over the grounds will release the sizing into the coffee brew and give it an unpleasant taste.

Operation

Inspect coffee urns inside and out before each use. Examine gage glasses, valves and faucets for leaks, and have faults corrected before using the urns. Check the urn bags; they should be in good repair and free of coffee grounds and other agents that might make the coffee unhealthy to drink or spoil its flavor. When the inspection has been completed, you are ready to operate the urn as follows:

1. Open the cold water filling valve and fill the urn with water to the full mark on the water gage.
2. Turn the electric power switch to the "ON" position.
3. Check the pressure gage. When the indicator or the pressure gage reaches 2 1/2 pounds (or the premarked operating position), the urn is ready for making coffee.
4. Clamp the leacher cloth firmly on the leacher, spread ground coffee uniformly inside the leacher in the quantity indicated by the ARMED FORCES Recipe Service for the gallons of coffee to be made (quantity of ground coffee may be varied to suit the taste), and place the leacher in the top of the urn.
5. Close the urn cover or lid.
6. Open the siphon valve and allow the required volume of water to siphon over the ground coffee in the leacher. If a full batch of coffee is being made, the water will cease to siphon when the correct volume of water has been sprayed over the coffee grounds, and heavy steam will show around the urn cover.
7. Close the siphon valve.
8. Open the agitating valve slowly to the end of the stem and, without pausing, slowly close the agitating valve.
9. Open the cold water filling valve and again fill the water tank.
10. Remove the leacher, remove used coffee grounds, rinse the leacher and leacher cloth in clean cold water, and store in clean cold water until required for use again. Replace the leacher cloth at least once a week. Discoloration of the cloth does not affect its utility provided it has been properly cared for.
11. Draw the coffee as it is needed.
12. Time the preparation of coffee so that it does not stand longer than 60 minutes before it is served.

In the larger urns where automatic agitators are provided, the question of repouring coffee is never considered. However, it is necessary to mix coffee prepared in an urn because the coffee at the bottom is strong, the coffee in the center is of average strength, and the coffee at the top, weak and bitter. The brew must be mixed thoroughly before it is served. To do this properly when the older type of urn is being used, remove the spent grounds after the coffee is brewed and then draw off 1 gallon of the brewed coffee for each pound of coffee used. Pour it back as rapidly as possible into the urn to ensure thorough mixing. NEVER pour coffee over spent grounds.

Cleaning

To clean electrically heated coffee urns, follow the instructions listed below:

1. Heat clean water in the urn water tank by turning the electric power switch on.
2. Close the urn cover, then open the siphon valve and siphon enough hot water to half fill the coffee tank. Add one to two tablespoons of cleaning compound per five gallons of water, or as directed by manufacturer's instructions. Allow solution to remain in the tank for approximately 30 minutes, during which time the heat should be set on maximum.
3. Wash the inside of the coffee tank, top, rim, and cover, using a clean cloth. Do not use a brush or mop for washing urns having a glass-lined coffee tank. Clean the faucet, gage glass, and draw-off pipe after each use with a wet brush and with destaining compound.
4. Drain the water off by opening the coffee faucet.
5. Close the urn cover, open the siphon valve and siphon approximately 1 gallon of hot water into the coffee tank. Open the coffee faucet and then open the agitating valve for about 1 minute to sterilize the dispensing route and coffee faucet.
6. Close the coffee faucet.
7. Siphon the coffee tank half full of hot water. If the urn is being secured for the night, allow the water to stand over night. Drain the water off in the morning and rinse the urn before it is used.

Clean the urn in accordance with the above instructions at the end of each day. Twice weekly, sweeten the urn by the use of a solution of 1 cup of baking soda to 1 gallon of hot water. Keep the baking soda solution in the urn for approximately 15 minutes or longer. Then agitate by opening the agitating valve for 1 minute; drain and flush thoroughly with hot water. DO NOT use cold water on glass-lined urns; always use hot water by operating the siphon valve.

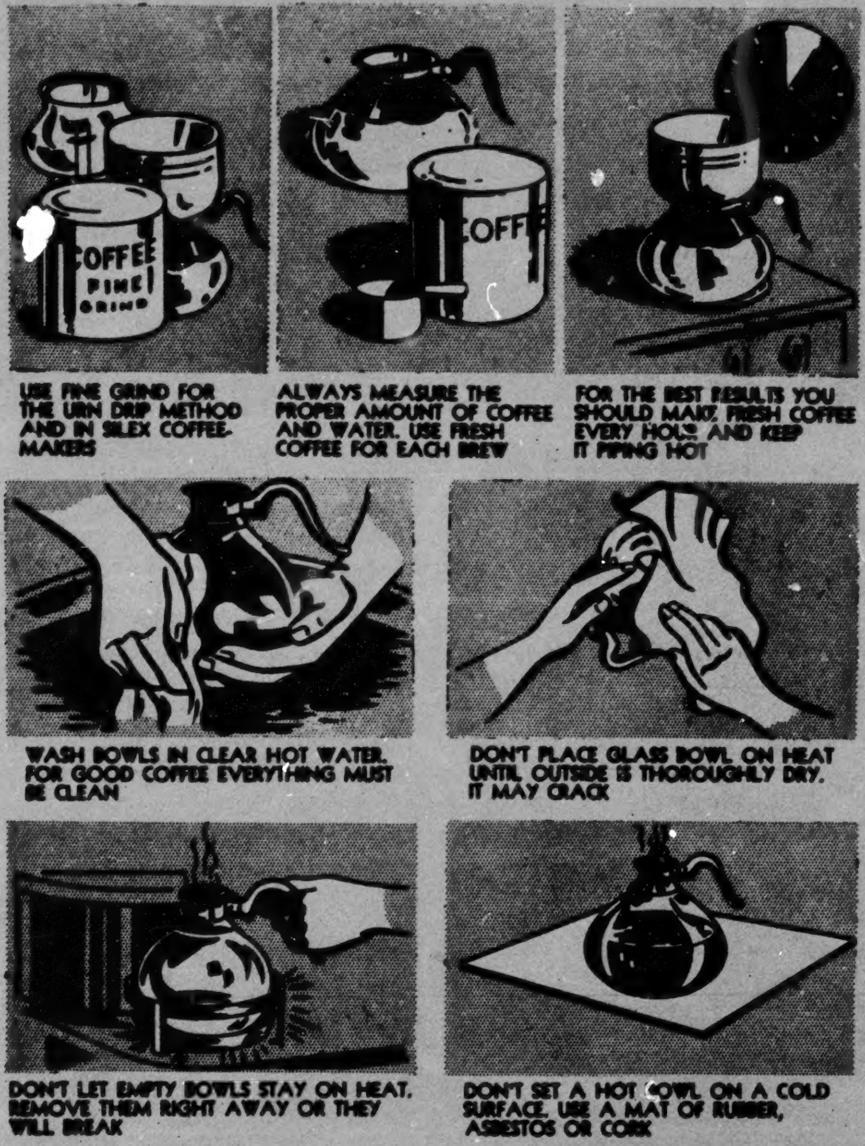
VACUUM COFFEE MAKERS

Many small private dining facilities use vacuum coffee makers such as the one shown in Figure 5-6A. They may be made of glass or stainless steel and are simple to operate. Since a smaller quantity of coffee is brewed each time, it is made more often and is used before it becomes stale. You can make excellent coffee by following the instructions below.

1. Fill the lower bowl with fresh water to within 1 1/2 inches of the neck or to the watermark and place it on the heating unit.
2. Insert the filter in the upper bowl and insert the upper bowl in the lower bowl. Make sure that the upper and lower bowls are tightly connected.
3. Measure the correct amount of coffee and place in the upper bowl.

Boiling action in the lower bowl forces the water into the upper bowl. When the upper bowl is half filled, stir to thoroughly mix the coffee and water, and let the rest of the water rise to the upper bowl. Turn off the heat and let the coffee return to the lower bowl. The upper bowl should be removed, emptied, and rinsed. Place the filter in cold water. Place the coffee on a warm burner. Do not permit it to boil as this will spoil the flavor.

After the meal the coffee maker should be thoroughly washed and rinsed in hot water (180°F). Both cloth and metal filters are used in vacuum coffee makers. Cloth filters should be rinsed in cold water then immersed in cold water until they are used. Metal filters should be rinsed


COFFEE FINE GRIND
USE FINE GRIND FOR THE URN DRIP METHOD AND IN SILEX COFFEE MAKERS
COFFEE
ALWAYS MEASURE THE PROPER AMOUNT OF COFFEE AND WATER. USE FRESH COFFEE FOR EACH BREW
FOR THE BEST RESULTS YOU SHOULD MAKE FRESH COFFEE EVERY HOUR AND KEEP IT PIPING HOT
WASH BOWLS IN CLEAR HOT WATER. FOR GOOD COFFEE EVERYTHING MUST BE CLEAN
DON'T PLACE GLASS BOWL ON HEAT UNTIL OUTSIDE IS THOROUGHLY DRY. IT MAY CRACK
DON'T LET EMPTY BOWLS STAY ON HEAT. REMOVE THEM RIGHT AWAY OR THEY WILL BREAK
DON'T SET A HOT BOWL ON A COLD SURFACE. USE A MAT OF RUBBER, ASBESTOS OR CORK

48.14

Figure 5-6A.—Vacuum Coffee Maker.

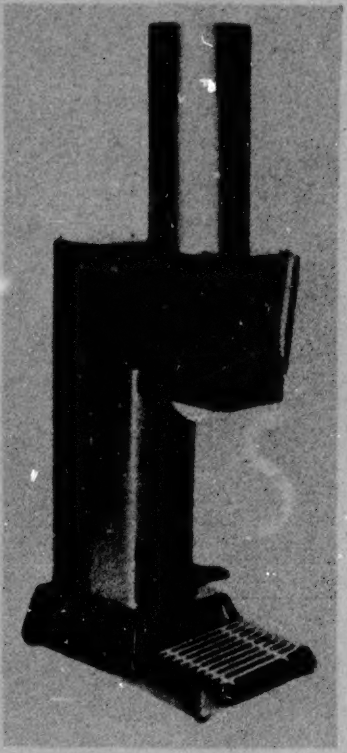
with hot water (180°F) after each use and air dried.

You will have to be very careful when using, cleaning, or stowing glass coffee makers as they will break very easily. If you place an empty, wet, or cold glass bowl on a hot burner, it will most likely crack.

ICED TEA DISPENSER

Description

The iced tea dispenser is used with instant powdered tea and provides a convenient method of serving iced tea at meals. (Figure 5-7.) This



48.101
Figure 5-7.—Instant Iced-Tea Dispenser.

may not be the model used aboard your ship but all models used are basically the same.

Operation

The instant tea comes in a sealed jar, ready for use in the dispenser (Figure 5-7A). To insert jar:

1. Remove jar lid and seal from product jar.
2. Replace with dispensing funnel, screw it on firmly (DO NOT TOUCH internal components of funnel assembly.)
3. Insert jar and funnel in tea dispenser. It is now ready for operation.
4. To operate, fill a glass with ice and place it directly under the spout. Press the glass lightly against the actuator and hold until glass is filled.

The tea dispenser is preset to produce a beverage suitable for the average consumer but can be adjusted to produce either stronger or weaker tea by following the procedures outlined in (Figure 5-7B). To remove jar for cleaning or refilling:

1. Remove bottle and funnel assembly by sliding straight out of coil shield hole.
2. Remove funnel assembly from jar.

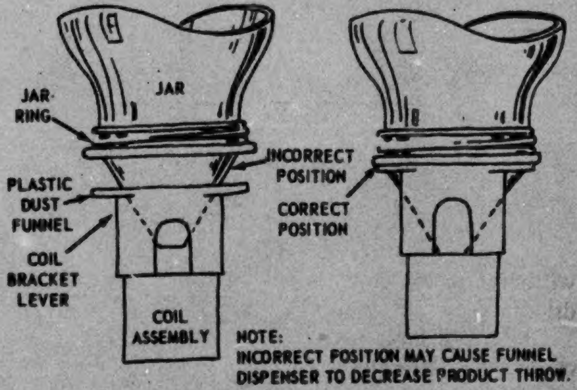
Cleaning

The machine should be cleaned after each meal.

Wipe the exterior components with a soft damp cloth. Empty the drip pan. Wash drip pan and the grill with mild detergent and warm water. DO NOT SOAK PLASTIC PARTS IN HOT WATER OR WASH IN DISHWASHING EQUIPMENT. In order to prevent gumming of the instant tea dispenser, ensure that all components are thoroughly dry before inserting a new bottle of tea.

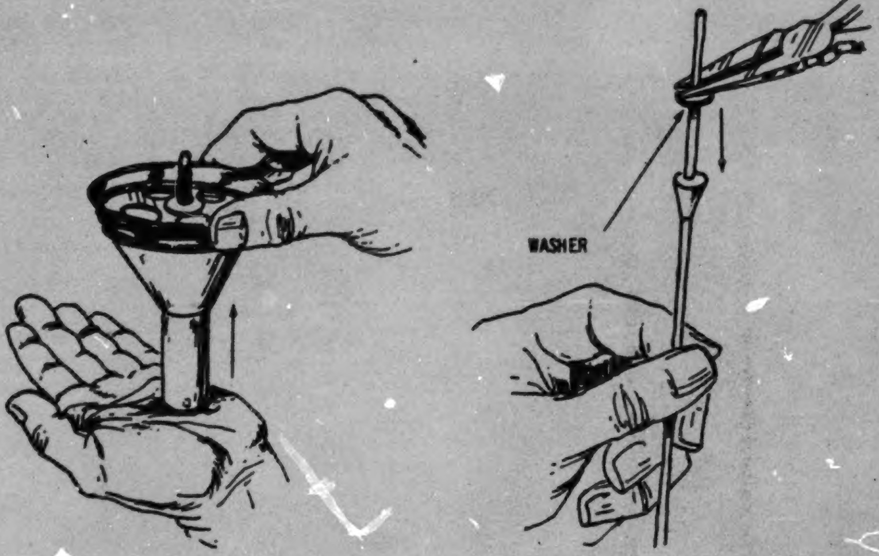
VEGETABLE PEELER

Vegetable peelers (Figure 5-8A) have capacities of either 10, 15, 30, or 50 pounds,



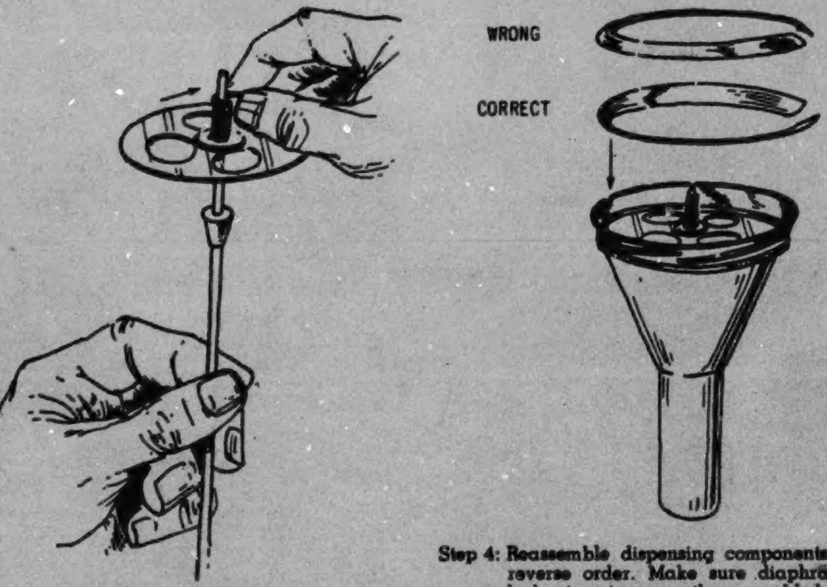
NOTE:
INCORRECT POSITION MAY CAUSE FUNNEL DISPENSER TO DECREASE PRODUCT THROW.

48.102
Figure 5-7A.—Refill Instructions.



Step 1: To separate diaphragm and spring assembly from jar ring and funnel, grip jar ring with one hand and thrust palm of other hand sharply against bottom of funnel. Repeat until lock ring dislodges. Remove lock ring and pull out diaphragm and spring assembly.

Step 3: Add one or more washers to decrease drink strength. Conversely, remove one or more washers to increase drink strength. Force washer with pliers or a tube until washer fits tightly against top of cone. Normally, one washer change will be adequate.

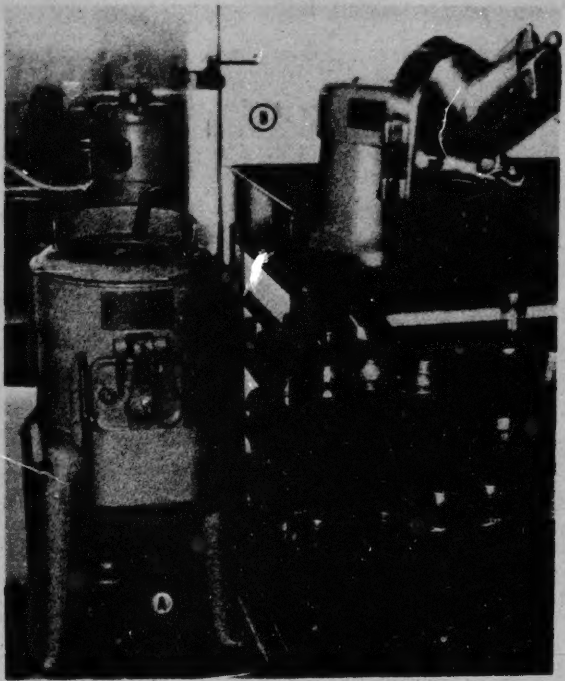


Step 2: Disassemble diaphragm and spring assembly by pulling top spring loop out. Hands must be clean and dry.

Step 4: Reassemble dispensing components in reverse order. Make sure diaphragm lock ring is correctly assembled as shown. Dispensing assembly must be completely dry before reinstalling. Tighten securely on product jar.

48.102.1

Figure 5-7B.—Dispensing Strength Adjustment Procedures (Keep Parts Dry at All Times).



48.15
Figure 5-8.—A. Vegetable Peeler; B. Vegetable Cutter.

and have a cylindrical hopper with an abrasive covered wall and an abrasive covered rotary disk in the bottom. The disk has a wavy surface. This surface agitates the vegetables in such a manner that they continually present new surfaces for action by the abrasive material.

Operation

Before loading the machine, sort the vegetables so that those in any one load are of the same size and free of stones, sticks, and other hard objects. The machine should be started and the water turned into it before any vegetables are added. Do not overload the machine. The quantity of vegetables loaded should not exceed approximately 66 percent of the total hopper capacity. A larger quantity will not be thoroughly agitated.

If the abrasive surfaces of the machine are kept reasonably clean, a charge of vegetables should be satisfactorily peeled in about 1 minute. Deep eyes or depressions in potatoes should be removed and the peeling finished with a hand peeler or small knife. It is wasteful to allow vegetables to remain in the machine longer than necessary because valuable nutrients will be lost.

Cleaning

At the end of each day's use, secure the power and dismantle the machine. Lift the cover off and take out the abrasive disks; remove the peel trap and strainers; wash the removable parts, the interior and exterior of the machine with hot soapy water, and rinse with hot water (180°F). Be sure all food particles are washed out. Allow all parts to air dry before reassembling the unit.

VEGETABLE CUTTERS

Several types of electrically operated and manually operated equipment are used in the galley for cutting, slicing and grating vegetables.

Electric Vegetable Cutter

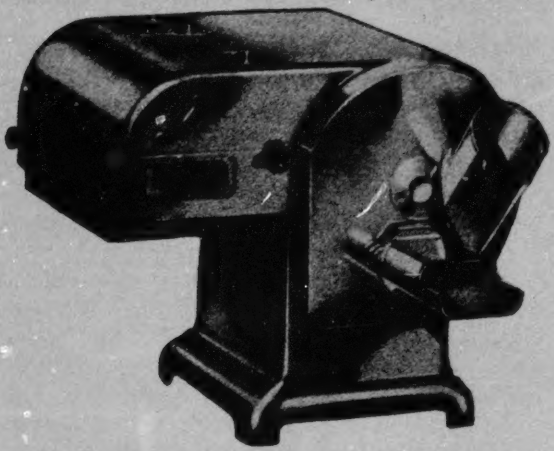
Vegetable cutters (Figure 5-8B) are machines which, without the use of attachments or removable parts, make three classes of cuts of vegetables—shredded, sliced, and grated. A dial control on the side of the machine allows instant changing of the thickness of the cut, even while the machine is in operation.

CLEANING.—The entire front of the machine swings open to provide complete access to the interior for the purpose of cleaning and changing the blade. The machine should be washed with hot water immediately after it is used. The knurled knob holds the front of the machine securely when it is in operation.

Clean and scrub the knives and bowl with hot, soapy water and a very stiff brush. Rinse them well with hot water (180°F) and allow them to air dry thoroughly before reassembling.

Vegetable Cutter and Slicer

The vegetable cutter and slicer (Figure 5-9) is used to cut vegetables which are to be used for



48.15(48E)

Figure 5-9.—The Vegetable Cutter and Slicer.

cooking and for salads. The machine may be used to do as many as three different cutting jobs at once. It may be used for slicing either bias or horizontal french fries, julienne strips and for coarse and fine chopping. The machine has a slicer adjustment for thicknesses up to 1/4 inch. The adjustment can be made while the machine is in motion. To make french fries or diced potatoes, the potatoes must be sized so that they will go into the machine.

CLEANING.—With the machine turned on, put a pan underneath the outlet to catch the water and vegetable particles and flush with water. This should be done after each use.

At the end of the day disassemble the machine and thoroughly clean the cutting plates and disks. Carefully inspect each part for strings of vegetables which may not have washed off.

This machine has points which must be oiled daily in order to prolong the life and efficiency of the machine.

Cutter, French Fry

The cutter (Figure 5-10) is used for cutting vegetables into cubes, slices, and french-fry shapes. By means of a hand-operated lever, the vegetables are pushed through a die containing knives that cut them into parts one-half inch thick. Different kinds of dies may be used to give cubes or slices.

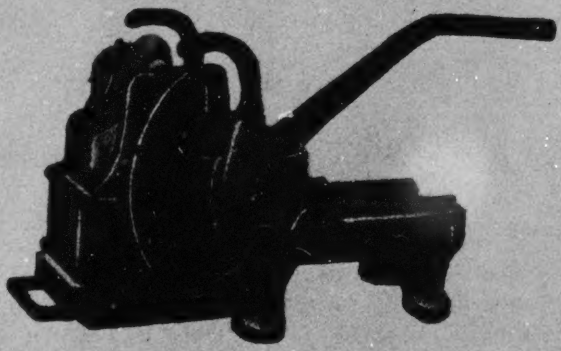
When you operate the cutter, make sure the dies are properly set. Keep the dies absolutely clean and dry. Clean and oil the machine after each use.

French Fry Extruder

The french fry extruder (Figure 5-11) is a hand operated machine which will make french fries out of dehydrated potato mix.

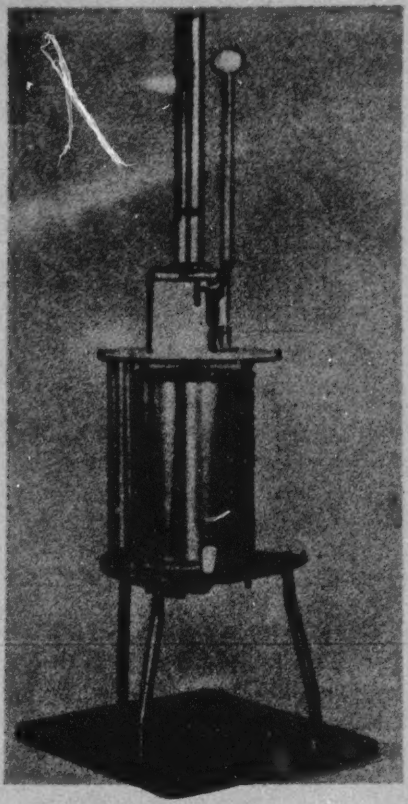
OPERATION.—To operate the french fry extruder, follow the procedure outlined below.

1. Place the mixing seal on the bottom of the container-cylinder using seal tension spring.
2. Mix the potatoes following manufacturer's instructions.
3. Place the extruder plate into cavity of the table base. Be sure that it is properly seated in grooves.
4. Raise the rack all the way up.
5. Place the pressure plate in the container-cylinder on top of the potato mix.
6. Remove the mixing seal and set the loaded cylinder on top of the extruder plate, making sure that it is in place.
7. Turn the handle and lower the rack until it settles on top of pressure plate.
8. Set the control dial for the desired length of the french fry.



48.16

Figure 5-10.—French Fry Cutter.



48.109
Figure 5-11.–The French Fry Extruder.

9. Pull down the handle to press out the potato mix.
10. Use the cutter bar to cut after reaching desired length.
11. Pull handle again repeating the same procedure until cylinder is empty and repeat the whole operation if more fries are needed.

Cleaning

To clean the french fry extruder, disassemble it and wash in mild detergent water. Make sure all areas are thoroughly cleaned. Rinse in hot water (180°F) and let air dry.

STEAM-JACKETED KETTLES

Steam-Jacketed kettles are used to prepare a variety of food items such as soups, sauces, vegetables, meats, beverages. This equipment is very important and should be handled with great care. (Figure 5-12) The kettles vary in size from 5 to 80 gallons. Approximately the lower two-thrids of each kettle is surrounded by a jacket which is offset from the main kettle body to provide space for steam to circulate and heat the contents of the kettle. The kettles are permanently mounted on a pedestal or three legs, and have a hinged lid or cover. They also have a tube at the bottom of the hemispherical body of the kettle with a faucet at the outer end for drawing liquids in lieu of dipping them out, a steam inlet connection, a steam outlet connection, and a safety valve. Some steam-jacketed kettles (trunion) have a handle on the side making it possible to tilt the kettle and pour contents into service container. This type of kettle is usually used to prepare gravies and sauces. Kettles now in use are made of three types of material–corrosion-resisting steel, aluminum, and single clad corrosion-resisting steel.

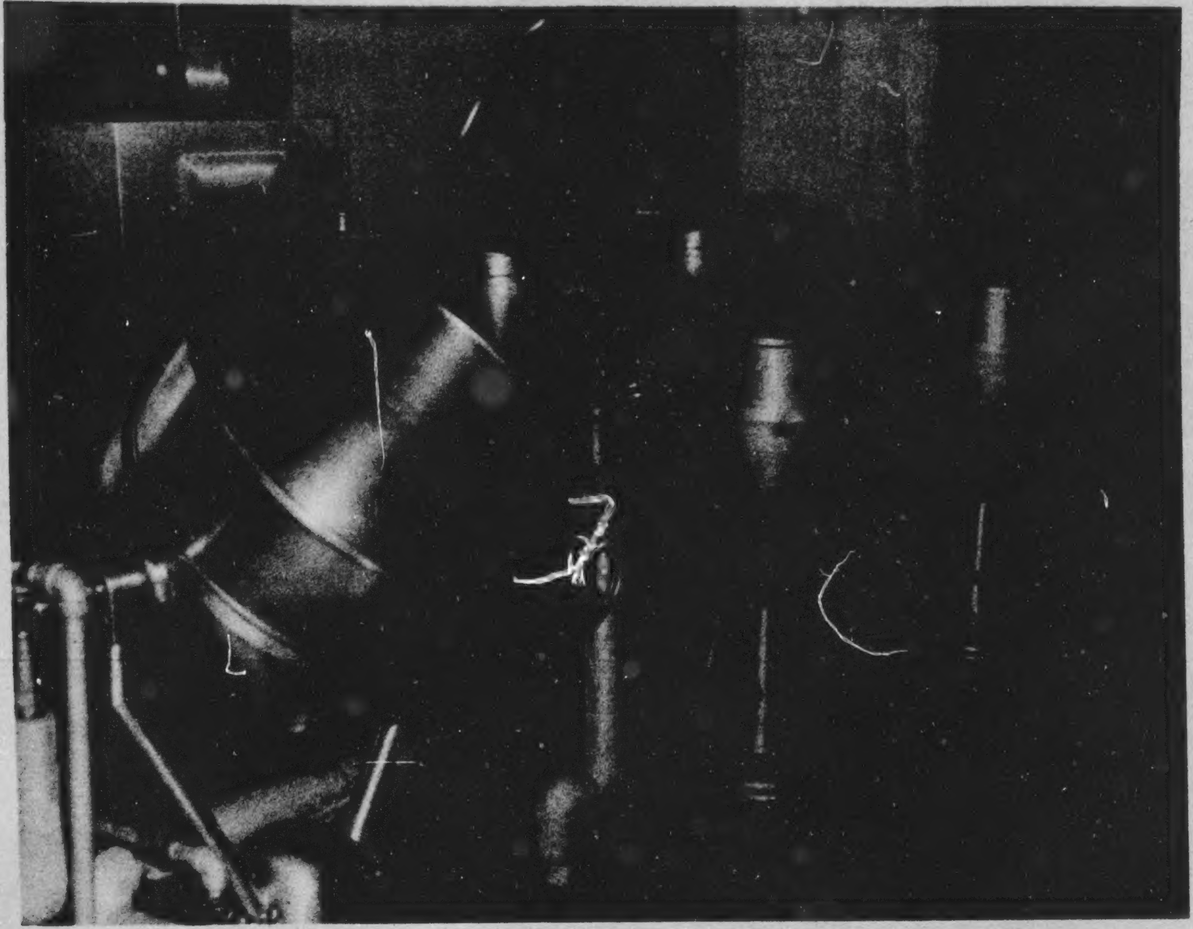
Never fill the kettle completely full. If it is necessary to stir the contents, use a metal paddle; never leave the paddle in the kettle while cooking.

Operation

The kettles are constructed to operate on a maximum steam pressure of 45 psi. When the pressure in the galley steam line is in excess of 45 psi, a pressure regulating valve (safety valve) which is installed in the steam line leading to the kettles, is set to blow off at 45 pounds pressure. Do not tamper with the safety valve or tie it closed. It is there to prevent the kettle from exploding. When you heat a cold kettle, turn the steam on gradually, allowing the shells to become thoroughly warm before full pressure is applied. After the shells have become warm, and before applying full pressure, open the safety valve by pulling the lever. Opening the safety valve while the pressure is within the shell removes air from within the jacket, and prevents the kettle from becoming air bound.

Cleaning

The kettles should be cleaned thoroughly after each use. Before they are used they should



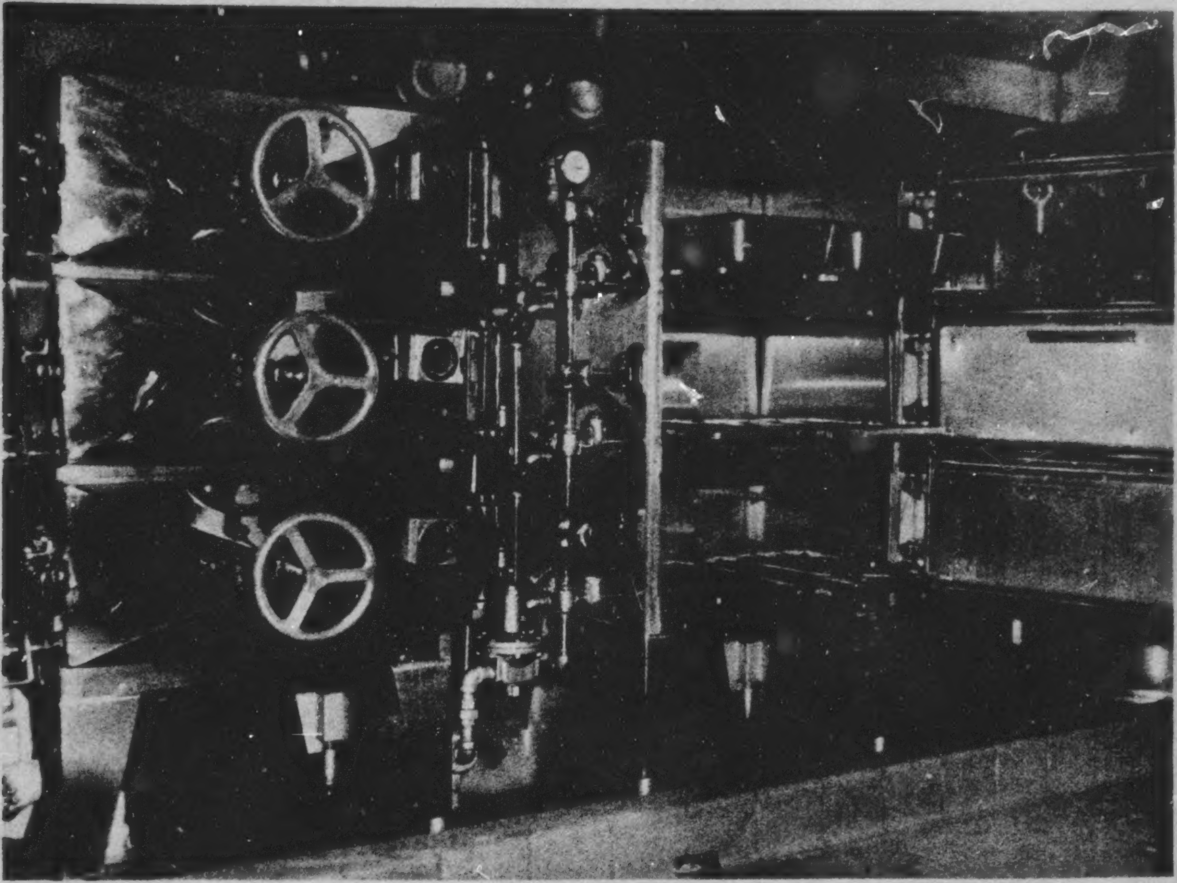
48.18

Figure 5-12.—Steam-jacketed Kettles.

be given a rinse with clear water. The draw-off tube and fittings should be cleaned with a round brush, with a flexible wire handle, in hot water. When you clean the draw-off tube, remove the plug from the faucet. (CAUTION: Do not change plugs from one kettle to another. Each plug is machined to match its own faucet; therefore, interchanged plugs may cause leakage.) Run the cleaning brush back and forth through the tube while a small stream of hot water is running through the tube. DO NOT use caustic cleaners on the kettles. The draw-off tube of older kettles is made up of several pieces which are threaded so that they can be screwed together. To clean this type, remove the plug or cap at the back end of the draw-off so that the cleaning brush can be run back and forth through the tube. All of the old type draw-off fittings should be removed and thoroughly cleaned after each use.

STEAMERS

Steamers (Figure 5-13) are used for steaming fish, fruit, meat, poultry, and vegetables. Most steamers used in the Navy consist of a



48.19

Figure 5-13.—Steamer.

three-door, three-compartment unit. Each unit has one or two perforated pans or baskets.

Operation

When operating steamers you are not limited to the use of pans and baskets furnished with them. If juices are to be saved, you should cook in leakproof solid pans of a suitable size. Pans should not be overloaded; steam circulates best when pans are about three-fourths full. Different foods may be cooked in the same steam compartment without mixing flavors or affecting the taste of the different foods. Onions and pudding placed in individual pans may be cooked in the same steam compartment without a transfer of flavor.

After the food has been placed in the steamer, close the compartment door securely. (The door latch is linked with the steam supply on most steamers, and the final movement of the lever locks the door and turns on the steam at the same time. Unlocking the door turns off the steam before the door can be opened.)

If the steam supply is controlled separately, open the steam valve slowly by turning the valve wheel counterclockwise after the door is latched. Then observe the middle indicator on the pressure gauge, which should be in the range of 5 to 7 psi. Turn the valve wheel clockwise to reduce steam pressure if it is above 7 psi.

Watch your cooking time closely and avoid spoiling food by overcooking. Less time is required for steam pressure cooking than for boiling food in water; the temperature of 7 psi steam is 233°F, and the boiling temperature of water is 212°F.

After cooking has been completed, turn off the steam supply by turning the valve wheel clockwise on separately controlled units, or by unlatching the compartment door of the latch-controlled steam supply. You can relieve the steam pressure by operating the lever of the safety valve, if one is provided; otherwise, wait 2 minutes before you open the door to full open position. The gauge should read 0 psi before the door is opened.

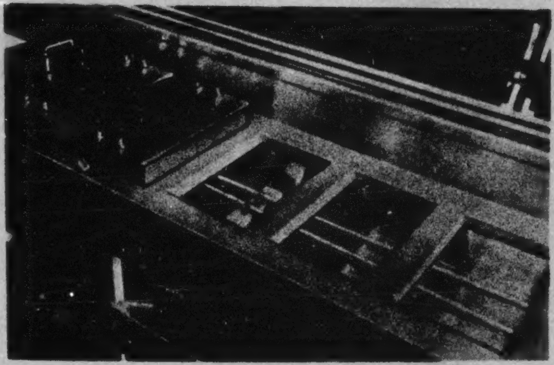
Care and Cleaning

Occasionally, when you examine the drainpipe for steam-condensate drip, none will appear after a few minutes of steamer operation. When this is the case, turn off the steam supply by unlatching the door or closing the valve, as necessary. The fault normally is stoppage in the trap, strainer, or drainpipe. To eliminate this condition, close the steam valve, remove the steam-trap strainer basket, and clean it by scraping out the solids and washing the basket until the mesh or perforations are open and clear. Clean the pipe connection in the steamer compartment, reassemble the strainer and repeat the pressure cooking. If there is still no drip, the steam trap is at fault, so report this to the engineer officer via the chain of command.

After each meal, the steamer should be brush-scrubbed, washed clean with hot soapy water, and rinsed with hot water (180°F) and allowed to air dry.

STEAMTABLE

Steamtables are used for serving hot foods. There are several types: (a) Those with water compartments heated by steam coils (Figure 5-14) at 40 psi pressure or less (b) Those with steam-heated water compartments and dishwarmers (c) Those with water compartments heated by immersion-electric heating elements and (d) Dishwarmers.



48.20

Figure 5-14.—Steamtable.

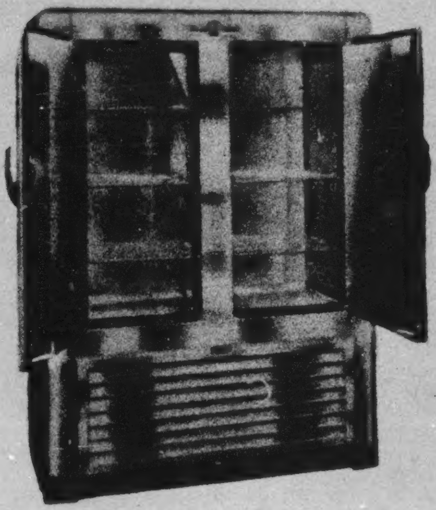
Operation

When the steamtable is in use, there should be a steam condensation which should drip into the drain. If no condensation appears after 2 minutes of operation, turn off the steam valve and clean the strainer basket of the trap.

Do not overload food pans. An excessive amount of food makes it difficult to maintain the correct water compartment temperature which is between 180°F and 200°F. If, on the other hand, water in the steamtable is allowed to become hotter than 200°F, the food will dry rapidly and continue cooking from the excess heat. You can correct this by adding more water to reduce the heat. Because food tastes best if served within 30 minutes (preferably within 15 minutes) after being placed in the steamtable, do not place food pans in the steamtable too early.

Care and Cleaning

Wash the pans in the pot sink by hand, using cleaning brushes, metal sponges and hot soapy water, and rinse with hot clear water (180°F). Only fiber sponges should be used in cleaning pans of copper, copper-nickel, or corrosion-resistant steel; steel sponges and abrasive cleaners would scratch the surfaces.



48.21

Figure 5-15.—Refrigerator.

After each meal, drain the steamtable, wash the tanks with hot soapy water, and rinse with very hot fresh water of at least 180°F. Wash the top and front of the steamtable to make it bright, clean, and sterile; then wipe it dry with a clean cloth.

Steamtables should be maintained in a sanitary, steamtight, and safe operating condition at all times. Metal parts should be kept free of corrosion by removing rust with solvents and by applying vegetable oil to bare spots.

REFRIGERATORS

The refrigerator used in the galley is similar to the one illustrated in Figure 5-15. It consists of an insulated, stainless steel compartment, and rustproof, acid-resistant shelves. The refrigerator may be 5 or 100 cubic feet in size, and is designed for storing foods for short periods of time. Most refrigerators installed aboard ship have movable bars which fit in front of each shelf to keep the contents of the refrigerator from moving or falling out when the door is opened. At sea, food must be stowed in such a way that it will not move around when the ship rolls. To keep a refrigerator operating at top efficiency, three things are important:

KEEP IT CLEAN
DO NOT OVERLOAD IT
DEFROST IT REGULARLY AND PROPERLY

Defrosting

You may defrost the refrigerator on a schedule or when the frost accumulation requires it. The number of times that a refrigerator requires defrosting depends, of course, on the rate at which frost builds up on the cooling unit. Ice formations should never be more than 3/16 of an inch thick, because ice and frost act as insulators and reduce efficiency.

Defrosting is accomplished by turning off the refrigerator, removing all food, and blocking the doors open. Defrosting may be speeded up, however, by placing pans of hot water in the freezer compartment. DO NOT scrape or chip the ice from the cooling coils as they are easily damaged, and do not pour hot water over the ice accumulation to melt it.

Washing the Refrigerator

A refrigerator that is not thoroughly clean will quickly develop a bad odor, and the foods in it will spoil. Cleanliness retards the growth of mold and bacteria which often cause food poisoning. A refrigerator should be cleaned at least once a week and after each defrosting. Never use a water hose in cleaning a refrigerator. The fluid may seep into the insulation and cause permanent damage. The proper cleaning procedures are as follows:

1. Wipe the gaskets around the door of the refrigerator to remove any oil or grease.
2. Wash the inside surfaces and food shelves with soap and warm water.
3. Rinse them with a warm solution of baking soda, using 1 tablespoon of soda to 4 quarts of water.
4. Dry all surfaces thoroughly after flushing out the drain with hot water.
5. Clean the outside with warm water, rinse it, and dry it.

Avoid Overloading

Never overload a refrigerator. An overloaded refrigerator cuts down air circulation and is hard to clean. To prevent overloading, limit the amount of food you draw from bulk storage at any one time. When you draw food that must be kept in the refrigerator, don't ask for more than you can store in your ready service refrigerator.

BREAD SLICER

The bread slicer (Figure 5-16) is a machine with small thin blades. The platform on which the bread is placed is at about a 45° angle so that the weight of the bread will force the loaf down on the cutting blade when the machine is turned on. The cutting blades are attached to a cam shaft which has half the blades going in one direction and the other half going in the opposite direction. The reason for this is so that it will not tear the loaf while it is being sliced. Never use your hand to push the loaf through the machine.

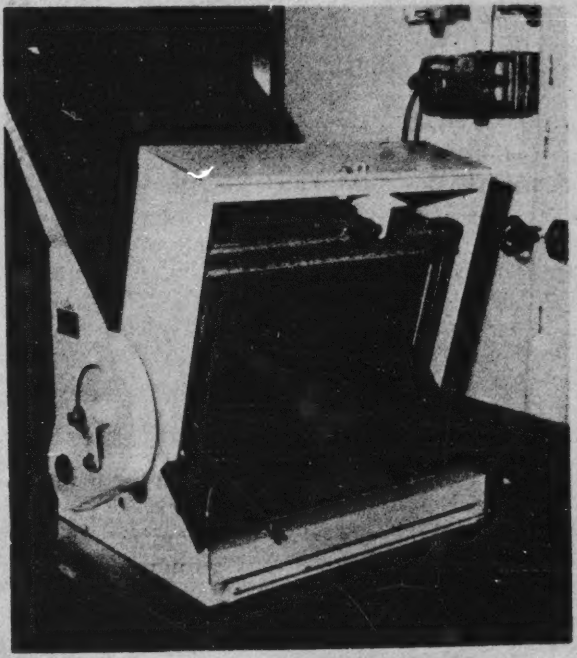


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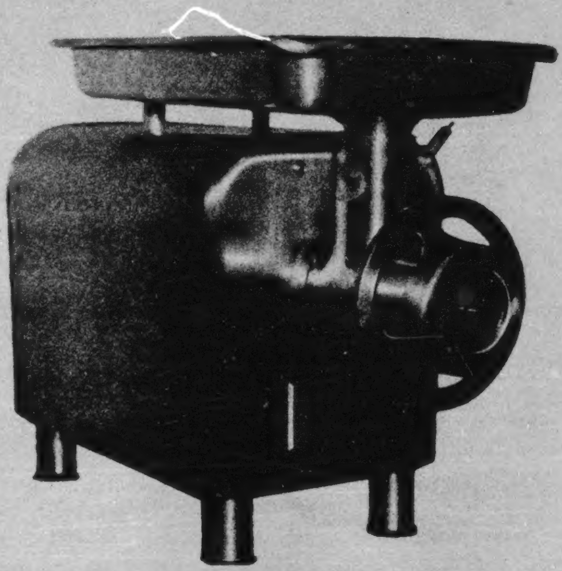
Figure 5-16.—Bread Slicer.



48.23

Figure 5-17.—Meat and Vegetable Chopper.

Cleaning

After it is used the bread slicer should be brushed clean of all bread crumbs and wiped down.

MEAT AND VEGETABLE CHOPPER, ELECTRIC

The electric meat and vegetable chopper (Figure 5-17) is used to chop (or grind) all meats (cooked or raw) and to prepare bread crumbs from leftover bread and toast. The meat and vegetable chopper is portable and may be placed where it is needed most. It should be placed on a sturdy stand within easy reach of an electric outlet.

Operation

Usually a three-eighths inch plate is used for grinding meat. The use of a three-sixteenths inch plate for such grinding puts too much pressure on the grinder. The coarser plates are for chopping vegetables. The cutting edge of the knife must go next to the plate. Never forcibly tighten the adjustment ring on the chopping end, tighten it snugly. Excess pressure will wear the chopper parts.

Start the motor, then feed the material into the chopper. Turn the motor off after the material is ground. Feed the material into the machine with the tools intended for that purpose. NEVER WITH YOUR HANDS.

Care and Cleaning

After meat has been chopped, take the grinder apart and wash each part thoroughly with soap and water, rinse with hot water (180°F), and allow to air dry. Do not allow food to dry on the surfaces of the chopper before you wash it. A grinder can be a breeding place for bacteria which might cause food poisoning. Great care should be exercised in keeping the parts of the grinder free from contamination.

Knives and plates should be sharpened before they get dull, but do not attempt this yourself. The engineering department should be consulted. It is a good idea to keep the same knife and plate together as they wear to fit each other. Tie them together with a cord after they are used so they will not get mislaid.

Keep the motor dry. Don't grind juicy foods, such as onions, because the juice will be forced back into the gear housing, causing a loss of oil and consequent wearing of gears.

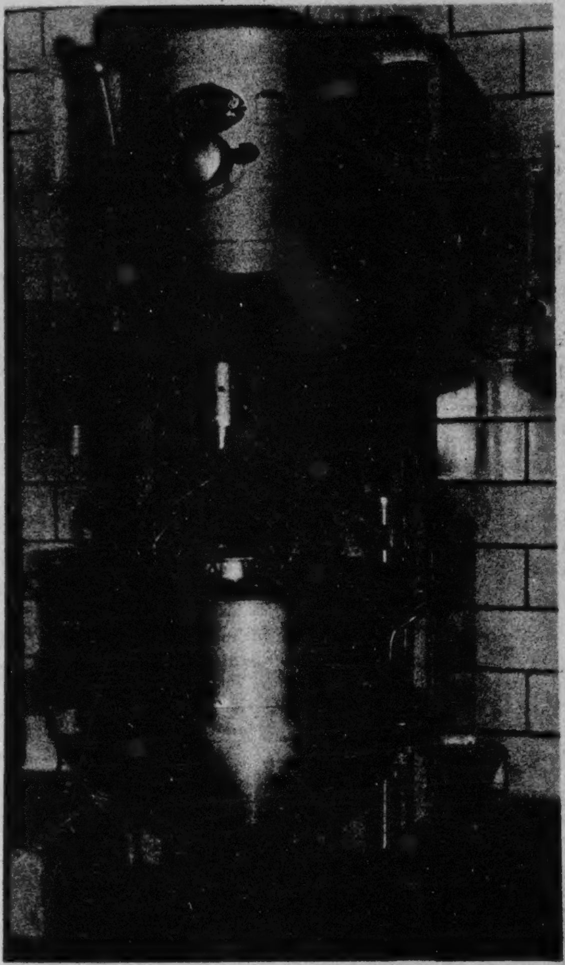
If you are grinding foods such as crackers, grind a very small amount at a time or the machine will jam. When the chopper is hot, do not run raw meat through it. Remember that bits of bones can break the worm gears and knives.

ELECTRIC FOOD MIXER

Electric food mixers are used for an infinite number of jobs including beating batters for cakes, mixing bread doughs, beating eggs, mashing and whipping potatoes.

Sizes and Attachments

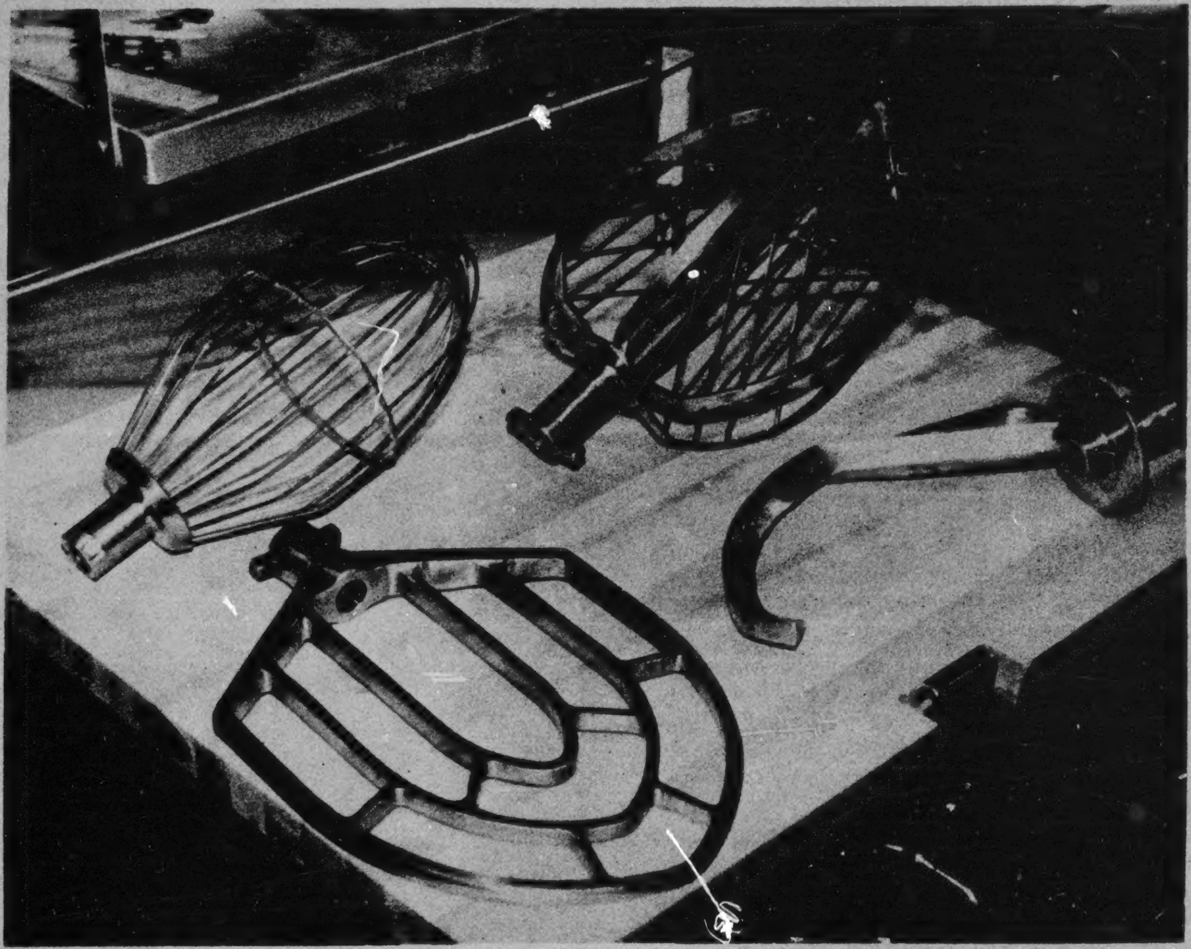
Food mixing machines (Figure 5-18) are furnished in 20, 60, 80, 110 and 140-quart sizes with the necessary attachments, paddles, and beaters (Figure 5-19). The wire beater is used for eggs, cream, and light-weight mixing; the flat beater for cake batters and medium weight mixing; the dough hook for mixing bread doughs; and the beater for medium stiff doughs.



48.12

Figure 5-18.—Electric mixer.

One part of the machine revolves through the use of a set of transmission and differential gears. Various shaped paddles and mixers can be attached to this revolving unit.



48.13

Figure 5-19.—Electric mixer attachments.

The lower part of the mixer contains two extended adjustable arms. A bowl, containing the foods to be mixed, is placed on these arms and the arms are then moved up so the paddles will revolve through the mixture. The machines have either 3 or 4 speeds. Usually they have an attachment hub that can be used for a vegetable slicer, juicer, and meat grinder.

Operation

Before operating the machine make sure that the bowl, paddles and/or beaters are thoroughly clean. If necessary, wash them in hot soapy water and rinse with hot water (180°F).

Place the ingredients in the bowl as specified on the ARMED FORCES RECIPE card. Do not fill the bowl more than half full. Place the bowl in a castered dolly and move to the mixer. Do not drag the bowl across the deck. Insert the bowl in the mixing machine, making sure that the bowl ears are on the supporting pins and both sides are locked in place.

Select the proper attachment and place it in the machine. The "L"-shaped notch in the beater is to be inserted over the pin in the shaft. On the smaller models the shaft will be grooved. The attachment is inserted into these grooves and slipped into the lock. Raise the bowl to the proper height by turning the wheel or crank.

Start the motor at NO LOAD and with clutch released shift to LOW SPEED; release the clutch each time the speed is changed. The speed to be used is indicated on the recipe card and on the instructions furnished by the manufacturer.

Watch mixing time and mixing speeds carefully. Often blended ingredients revert to separate ingredients if mixed too long or at an improper speed. If, during the process of mixing, some of the batter has piled up on the sides of the bowl, stop the machine. Using a long handled spoon or spatula, scrape down the sides of the bowl. NEVER put spoons, spatulas, or your hands into the bowl while the machine is in operation.

When the mixing is completed, move the control switch to the OFF position and stop the motor. Lower the bowl by the lever with which you raised it, remove the beater by turning the sleeve to the left. Remove any food left on the beater with a spatula. Then, place the bowl on the castered dolly and move it to the place of use.

Some electric food mixing machines are provided with bowls of two sizes. The 20-quart machine with both 12- and 20-quart bowls; the 60-quart machine with both 30- and 60-quart bowls and the 80-quart with 60- and 80-quart bowls. When you are using a smaller bowl on a large machine, an adapter must be used as well as the correct beater and/or paddle for the different size bowl. At no time should the beater or paddle scrape the bottom of the bowl.

Care and Cleaning

The electric mixer, beaters, whips, and bowls, all require care. Beaters, paddles, and bowls should be washed immediately after each use. Use hot soapy water and rinse with hot water (180°F). Hang beaters and paddles upside down to air dry. Clean the body of the machine after each meal. Use a damp cloth or wash with water as necessary for proper sanitation. Be sure that the beater shaft is free of all dirt and food particles.

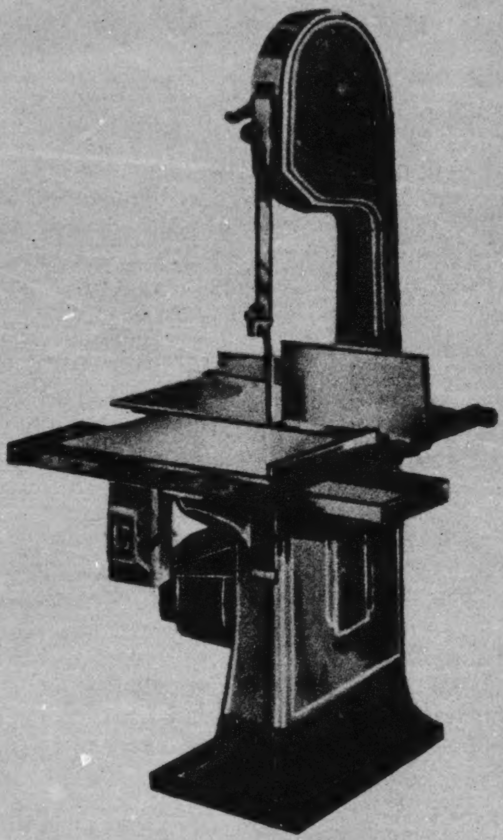


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Figure 5-20.–Electric meat cutter or sawing machine.

The motor and mechanical parts of the mixer should be inspected and maintained by the engineering department once a week.

MOTOR-OPERATED MEAT SAW

Electric sawing machines (Figure 5-20) are used mainly for cutting chilled, frozen, and smoked meats into steaks and chops. It is well to bear in mind that meat can be cut more uniformly by machine when there is still some frost in the boneless piece.

The saw is made to revolve by a mechanical arrangement of two wheels and an electric motor. The table on which the meat is laid is constructed so that you can cut the meat to any desired size. The saw blades themselves are five-eighths of an inch wide and about 10 feet long.

Operating the Saw

Before operating the saw, tighten the blade, using only one hand. Put only enough tension on it to keep it from slipping. Feed the meat straight through giving the blade a chance to cut. DO NOT FORCE. Use only sharp blades. Dull blades may heat up, twist, and break.

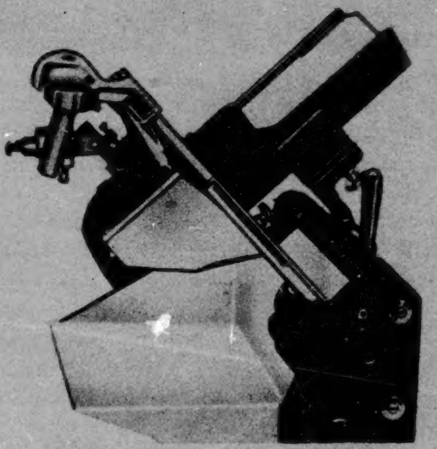
The electric meat cutter is a dangerous piece of equipment. A great deal of care is necessary to avoid injury when you operate this machine. There are five safety precautions which should be observed when you are operating the meat saw:

1. Before cutting meat, see that the right amount of tension is on the saw blade. There should be no flexibility whatsoever. The feel of the saw blade will be solid when the right amount of tension is applied.
2. Meat being sawed should be placed firmly against the sliding tray guide with enough pressure to maintain a uniform thickness of the slices.
3. Never use unnecessary force when cutting (sawing) meat. It is possible to break the blade and cause serious injury to yourself or others from flying pieces of metal.
4. Always make sure the guide is securely tightened after the adjustment for the thickness of the meat slices has been determined. Set the blade guide 2 inches above the meat.
5. Always keep your hands on the part of the meat which is most distant from the saw blade.

Care and Cleaning

The revolving wheels have grease chambers. Pack them frequently. Keep the machine clean. Oil it at least once a week. Always wash and sanitize the machine properly after each use or after every 4 hours of continued use.

Use hot soapy water to wash the machine, and rinse it with hot water (180°F). Do not drip water on the electric motor.



48.24

Figure 5-21.—Electric meat slicing machine.

MEAT SLICER

Meat slicing machines (Figure 5-21) are motor operated and are used for slicing hard or soft foods such as roasts, cheese, bacon, luncheon meat, various kinds of sausages, and ham.

The machine has a carriage on which the meat is placed. A swiftly revolving disk knife slices the meat as the carriage is moved across the face of the revolving knife.

Operating the Meat Slicer

To use the slicer, place the meat on the carriage and adjust the clamp to hold the meat firmly. This clamp also furnishes protection for your hand. Next, set the dial for the desired thickness of the slices. Then turn on the switch to make the disk knife revolve. Move the carriage back and forth with the hand lever. WARNING: KEEP YOUR HANDS AWAY FROM THE REVOLVING KNIFE.

The meat slicing machine can be a dangerous instrument if you aren't careful. Never use it when the blade guard is off. Don't leave the plug in the electrical socket when the slicer is not in use. Never put your hands under the guard, and don't operate the machine with wet hands.

Care and Cleaning

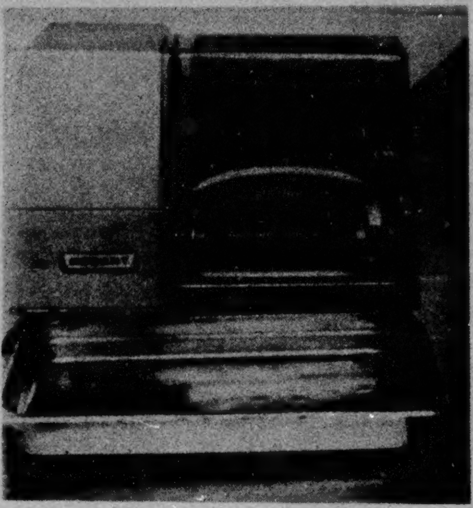
The meat slicing machine should be cleaned thoroughly after each use. Before dismantling an electric machine, turn the switch off and unplug. Remove all cutting and meat handling attachments. Clean the slicer knife with a damp cloth, wipe with a dry cloth, and cover the blade with a thin coating of salad oil to prevent rust. Never use a knife or other hard substance to scrape food particles from the slicer knife. Wash the attachments with soap and hot water; rinse with hot water (180°F) and allow them to air dry. Wash the machine with hot water and a stiff brush, taking care not to let any water [illegible] into the motor. (Do not use extremely hot water or steam to clean; too much heat may destroy the lubricants.) Dry the machine thoroughly with a cloth after it has been cleaned. Clean the counter top under the slicer. Reassemble the slicer immediately so that the bare knife will not be exposed. Replace all guards securely. Never lubricate the machine with salad oil because salad oil will gum up the machine.

MEAT TENDERIZER

The meat tenderizer (Figure 5-22) is used to tenderize all sorts of tough meats. The machine is about 20 inches long and about 1 foot wide.

To operate, turn the motor on, insert the meat to be tenderized into the opening at the top of the machine. The meat will pass through two sets of revolving rollers (which contain many small blades) and will be made tender. If further tenderizing is required, insert the meat again after first giving it a one-quarter turn (90°).

Meat tenderizing machines are equipped with a safety device that automatically stops the machine when the cover (shield) is raised. NEVER attempt to raise the top with the machine running or operate the machine with the cover raised because of the danger of catching your fingers in the machine. Take the machine apart and clean it after each use. Oil the parts often.



48.103

Figure 5-22.—Meat Tenderizer.

KNIVES, CLEAVERS, MEAT HOOKS, AND SAWS

Many different sizes and shapes of tools are required for the many different meat cutting jobs. You must understand which knife or saw to use for each job and be sure that each knife or saw is used for the purpose for which it is intended. Be particularly careful with the bladed tools (knives and cleavers), for if they are improperly used their edges will be ruined. For example, you should never use the long thin bladed knife that is designed for carving cooked meats to bone a roast. It is easier, quicker, and more efficient to use the boning knife which has a stiff, narrow, short blade designed to cut close around bones. The knives with the long, wide blade are used to cut steaks and roasts before they are cooked.

Sharpening Knives

To get the most use out of the knives in the galley, they must be sharp. A dull knife is a hazard and makes extra work for you. A boning knife has a comparatively narrow bevel and will stand more hard use than a steak knife which has a wide bevel and a thin edge. But no matter what tool you use, you can't do a good job unless the tool is sharp. The butcher's steel is used only to keep the edges of knives straight and not to sharpen them. Nor should you sharpen knives on a power or hand driven stone, since this removes the temper from the cutting edge. The best things to use for sharpening are a water stone and a carborundum oilstone. If you use the entire stone when sharpening tools the stone will not "hollow out" at any one point. Draw the full blade, from heel to tip, across the length of the stone and then turn the knife over and pull it back from the opposite end of the stone. This sharpens the knife evenly and smoothly and causes the stone to wear uniformly. Always clean the blade and handle thoroughly after sharpening.

Steeling

In steeling there is a definite technique and definite types of steel should be used to true the edge. Never use a rough steel. A smooth steel should be used to keep the blade in perfect condition and to maintain a keen edge. The steel should have good magnetism in order to hold steel particles. The easiest and most effective method of steeling a knife is outlined below.

1. Hold the steel firmly in the left hand, thumb on top of the handle, with the point upward and slightly away from the body.
2. Place the heel of the blade against the top side of the tip of the steel. The steel and the blade should meet at an angle of about 25°
3. With a quick swinging motion bring the blade down across the steel toward the left hand. This should pass the entire edge lightly over the steel.
4. Bring the knife into position again but with the blade against the bottom side of the steel, and repeat the same motion of passing the blade over the steel.
5. Repeat the motion, alternating the knife from side to side; a dozen strokes will true the edge. Steel your knives as often as necessary to keep their edges straight.

General Care of Knives

Keep your knives in good condition. Don't let tools with wooden handles stand in water. Hot water soaks into the wood causing it to expand. As the wood dries it shrinks. The handles become loose, the seams are enlarged, and a knife has been ruined. Besides, enlarged seams are unsanitary.

Never throw knives into a drawer with other cutlery or tools. It is a good idea to have a knife rack fastened to some convenient place in the galley or meat cutting shop. If you keep knives in a drawer, secure a wood strip to the bottom of the drawer with slots wide enough for the blade of a knife. This sort of rack keeps unused knives out of the way, and keeps the blades in good condition.

Meat Cleavers

The meat cleaver should be used as little as possible. Unless it is kept very sharp and used properly, it will shatter the bone and drive bone splinters into the surrounding meat. These splinters can be dangerous as well as inconvenient.

DISHWASHING MACHINES

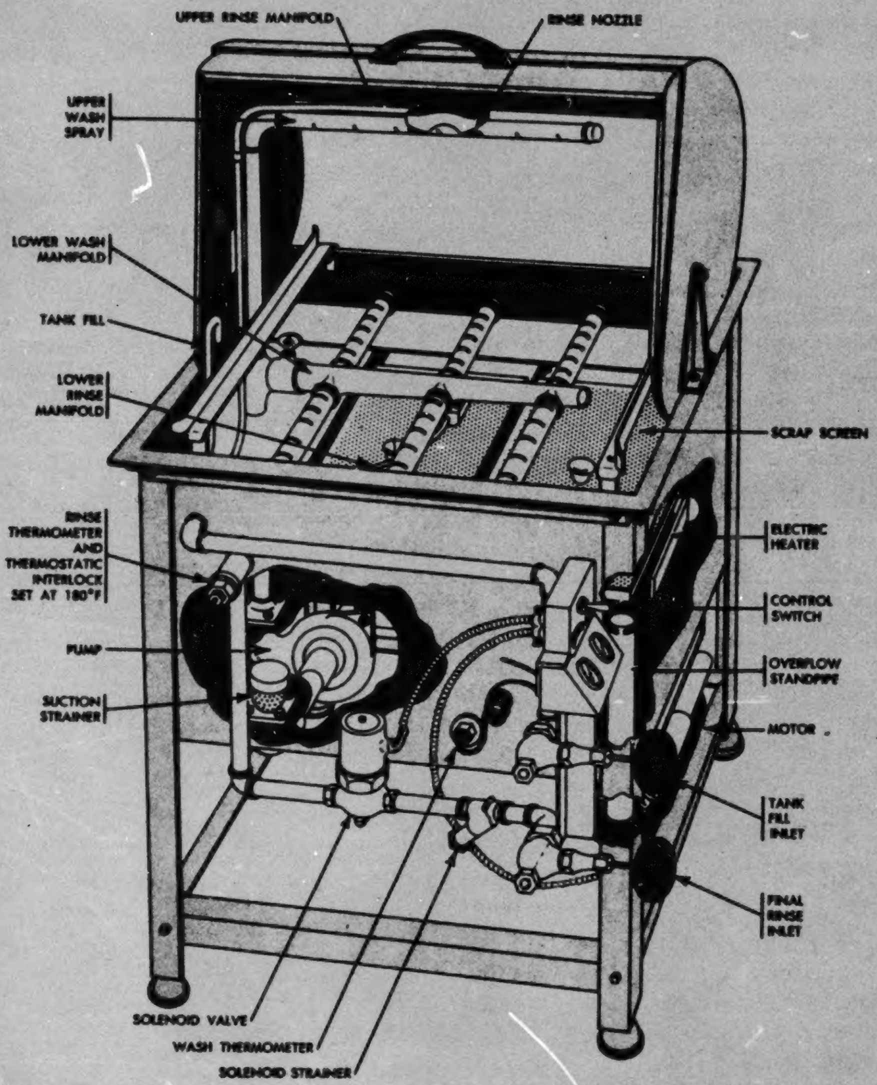
Proper operation and care of dishwashing machines in the dining facility are vital to the sanitation, safety, and efficiency of the activity, so you must know your machines and follow directions for their use and maintenance.

TYPES OF MACHINES

Dishwashing machines used in the Navy are classified as one-tank, two-tank, or three-tank machines. The three-tank machine is a fully automatic, continuous racking machine which scrapes, brushes, and provides two rinses. It is used at major recruit installations and other large activities.

Single-Tank Model

Single-tank machines (Figure 5-23) are used only on small ships where, because of space and

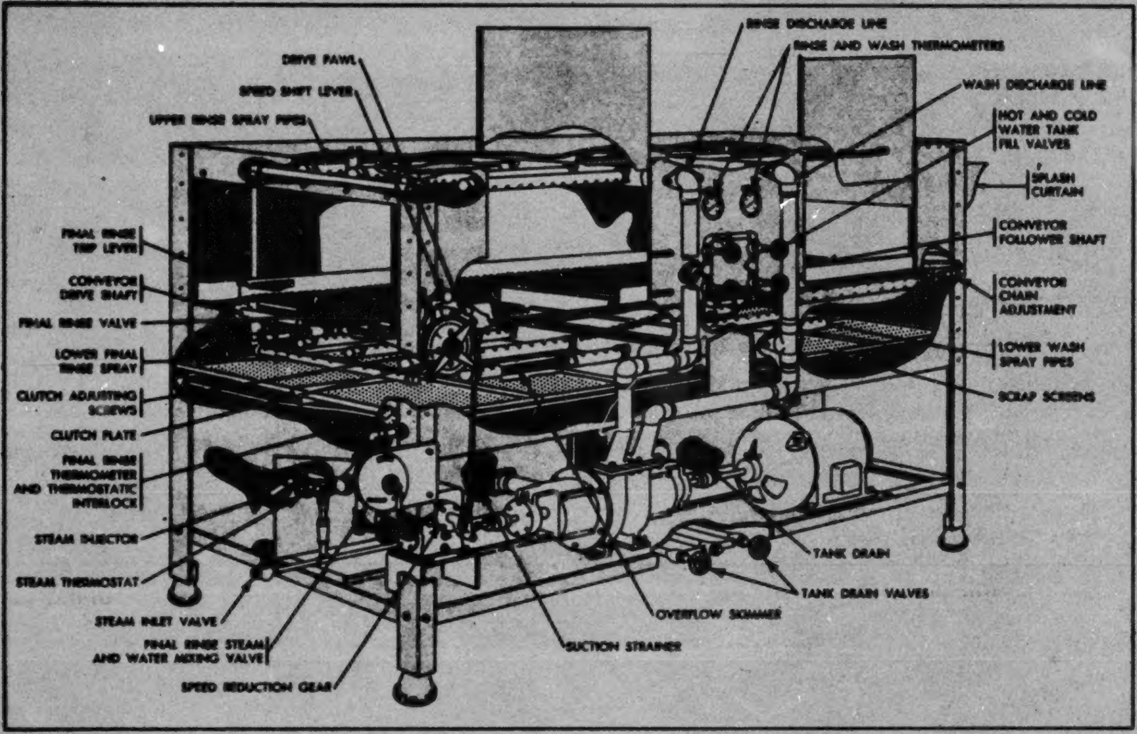

UPPER RINSE MANIFOLD
RINSE NOZZLE
UPPER WASH SPRAY
LOWER WASH MANIFOLD
TANK FILL
LOWER RINSE MANIFOLD
SCRAP SCREEN
RINSE THERMOMETER AND THERMOSTATIC INTERLOCK SET AT 180°F
ELECTRIC HEATER
CONTROL SWITCH
PUMP
OVERFLOW STANDPIPE
SUCTION STRAINER
MOTOR
TANK FILL INLET
FINAL RINSE INLET
SOLENOID VALVE
WASH THERMOMETER
SOLENOID STRAINER

48.34

Figure 5-23.—Typical semiautomatic single-tank dishwashing machine.

weight considerations, larger models are not feasible.

In order to control the bacteria to a satisfactory minimum in single-tank machines, it is necessary that the temperature of the wash water in the tank be 140°F to 160°F. Consequently, a thermostat is provided in the automatic machines to prevent operation when the temperature of the water falls below 140°F. Water temperature higher than 160°F results in less efficient removal of food particles when certain starchy and albuminous foods are served. Therefore, the washing time is extended in the automatic machines to 40 seconds. For best results, soiled dishes should be prewashed by


DRIVE PAWL
SPEED SHIFT LEVER
UPPER RINSE SPRAY PIPES
RINSE DISCHARGE LINE
RINSE AND WASH THERMOMETERS
WASH DISCHARGE LINE
HOT AND COLD WATER TANK FILL VALVES
SPLASH CURTAIN
CONVEYOR FOLLOWER SHAFT
CONVEYOR CHAIN ADJUSTMENT
LOWER WASH SPRAY PIPES
SCRAP SCREENS
FINAL RINSE TRIP LEVER
CONVEYOR DRIVE SHAFT
FINAL RINSE VALVE
LOWER FINAL RINSE SPRAY
CLUTCH ADJUSTING SCREWS
CLUTCH PLATE
FINAL RINSE THERMOMETER AND THERMOSTATIC INTERLOCK
STEAM INJECTOR
STEAM THERMOSTAT
STEAM INLET VALVE
FINAL RINSE STEAM AND WATER MIXING VALVE
SPEED REDUCTION GEAR
SUCTION STRAINER
OVERFLOW SKIMMER
TANK DRAIN
TANK DRAIN VALVES

48.35

Figure 5-24.—Typical automatic double-tank dishwashing machine.

hand in warm water containing detergent before placing them in single-tank washers.

Rinsing is accomplished by means of spraying hot water on the dishes from an outside source, and is controlled by an adjustable automatic steam-mixing valve which maintains the temperature of the rinse water between 180°F and 195°F.

In order to conserve fresh water, which must come from the ship's hot water system, the rinse time interval is limited to 10 seconds. When the water supply is not a problem, a rinse of 20 seconds is recommended.

Wash and rinse sprays are controlled separately by automatic, self-opening and closing valves in the automatic machine, or by handles in the manually operated machine. The automatic machine provides for a 40-second wash and a 10-second rinse; for manually operated machines, wash and rinse intervals are controlled by the operator who should allow a 40-second wash and a 10-second rinse.

Double-tank Method

Double-tank machines (Figure 5-24) are available with several different capacities and are used when more than 150 persons are to be served. These machines are provided with separate wash and rinse tanks. They also have a final rinse of hot water which is sprayed on the dishes from an outside source. This spray is opened by the racks passing through the machine. The spray automatically closes when the rinse cycle is completed. The final rinse is controlled by an adjustable automatic steam mixing valve which maintains the temperature between 180°F and 195°F. Double-tank machines are also equipped with a thermostatically operated switch in the rinse tank which prevents operation of the machine if the temperature of the rinse water falls below 180°F. The racks pass through the machine automatically by means of conveyor chains. The two-tank dishwashing machine should be timed so that the utensils are exposed to the machine sprays for not less than 40 seconds (20-second wash, 20-second rinse).

Operating Dishwasher

The first thing you should do is to read and become familiar with the operating instructions included on the instruction plate which is mounted on the hood of the machine you are operating. Always follow these instructions, or you may damage the equipment or injure yourself and others.

The following detailed instructions are given for double-tank machines since most machines in service are of this type. These directions are also generally applicable to single-tank units, except for wash and rinse time intervals and temperatures.

1. Inspect the machine to see that the wash tank is clean and all spray openings are free from food particles, strings, and other obstructions.
2. Close the drain valves on both tanks.
3. Open the water valves and fill both tanks to the level marked on each or up to the overflow line. When tanks are filled, tightly close the water valves.
4. Open the steam valve and heat the rinse tank water to 180°F or higher (not to reach vaporization point). Leave the steam valve on the rinse tank open so that the temperature does not fall below 180°F during operation of the machine. Machines are provided with a valve so that the final rinse temperature is 180°F or above. This adjustment must be made with the final rinse valve open.
5. On conveyor type machines, set the conveyor speed so that the dishes receive a minimum wash of 20 seconds and a minimum rinse of 20 seconds.
6. Add detergent. See Operation and Maintenance of Dishwashing Machines (NavShips 250-522) for the amount of detergent required for the wash tank size and the type of water being used.
7. Push the start button to start the pumps and conveyor. The rinse tank is fitted with a thermostat which, if properly set, will prevent the motor from starting until the temperature of the rinse tank has reached 180°F or higher.
8. Operate the machine for 1 or 2 minutes during which time the heat from the rinse spray should cause the temperature in the wash tank to increase gradually to 140°F.

At this point you are ready to start the washing procedure. However, it is important that dishes be thoroughly scraped free of solid food residues before they are washed. Pre-cleaning will extend the useful life of the detergent in the machine, will prevent clogging of the pump and spray jets, and generally will result in improved cleaning performance. The dishes should be held over a conveniently located garbage can and scraped with an approved all plastic brush. Prewash all dinnerware in the scullery sink prior to washing in the dishwashing machine. Place scraped dishes in dish racks. Cups, glasses, and containers should be placed upside down in appropriate racks so they are not filled with wash solution which cannot be washed away. Dinnerware should never be nested since this prevents efficient washing and rinsing. Do not stack silverware more than 1 inch deep in the rack.

9. Push the loaded dish racks into the machine on the conveyor until the racks come up against the conveyor lug. With manually operated "push through" machines, be careful not to push the racks along too quickly since this practice will result in unsatisfactory cleansing. A minimum of 20 seconds should be allowed for each rack.
10. Maintain the temperature of the wash solution at 140° to 160°F. Higher temperatures will result in the baking of egg and other protein solids onto the dishes.
11. Add 1/4 of the original amount of detergent every ten minutes of operation to compensate for the dilution and the increasing food particle load in the wash water.
12. Observe that as the first rack is discharged from the machine, the thermometer on the final rinse shows a temperature between 180° and 195°F.

13. Eating utensils should remain in the rack for approximately 1 minute for drying. When silverware racks are discharged from the machine, shake the rack slightly to get rid of entrapped water in the bowls of spoons and from the surfaces of all utensils.

After the dishes have been properly washed and cleaned, they should be stored in a clean, closed area to avoid recontamination.

The washing of silverware is often unsatisfactory because too much silverware is placed in the rack to be thoroughly cleaned. The proper procedure for washing the silverware is to sort the silver and place 15-20 pieces in each cylinder shaped compartment; run the silverware through the diswashing machine with the service end up. When the wash-rinse cycle is complete, the sanitized silver should be stored by inverting it in the cylinder shaped containers; thereby the washing and sanitizing is accomplished without having to touch the utensils.

Cleaning and Maintenance of Dishwashing Machines

Clean and rinse the interior of the machine, spray arms, and strainer pans after each period of use (Figure 5-25).

Brushes are provided for cleaning the removable spray arms. After they have been cleaned, they should be replaced in the machine so that the spray is directed vertically and not against the sides of the machine. Check the machine for leaky valves and report leaks to the food service officer immediately. Have all moving parts lubricated at regular intervals.

Descaling Dishwashers

The accumulation of scale deposits in dishwashing machines should be prevented for at least two reasons. FIRST—excessive scale deposit on the inside of pipes and pumps will clog them and will interfere with the efficient performance of the machine by reducing the volume of water that comes in contact with the utensil in the washing and sanitizing process. SECOND—scale deposits provide a haven for dangerous bacteria.

The supplies needed for descaling are available through Navy supply channels. See the supply list below:

Stock Number	Description of Material
9G6810-00-264-6722	Orthophosphoric acid 85% technical, 7 lb bottle
9Q7930-00-282-9699	Detergent, general purpose, 1 gal can
9Q7930-00-985-6911	Detergent, general purpose, 5 gal pail

It is necessary to know the capacity of the dishwashing machine tanks. This may be determined by measuring (in inches) the inside dimensions of each tank, applying the following formula: length x width x depth (to water line) ÷ 231 = capacity in gallons.

Steps and key points in descaling the machine are as follows:

1. Fill the tanks halfway to overflow level with hot, clean water.

   If tanks are not fitted with water level indicators, remove a section of the scrap tray in each tank so that the overflow pipe can be seen.

2. Add the required amount of acid and detergent to the water to prepare the cleaning solution.

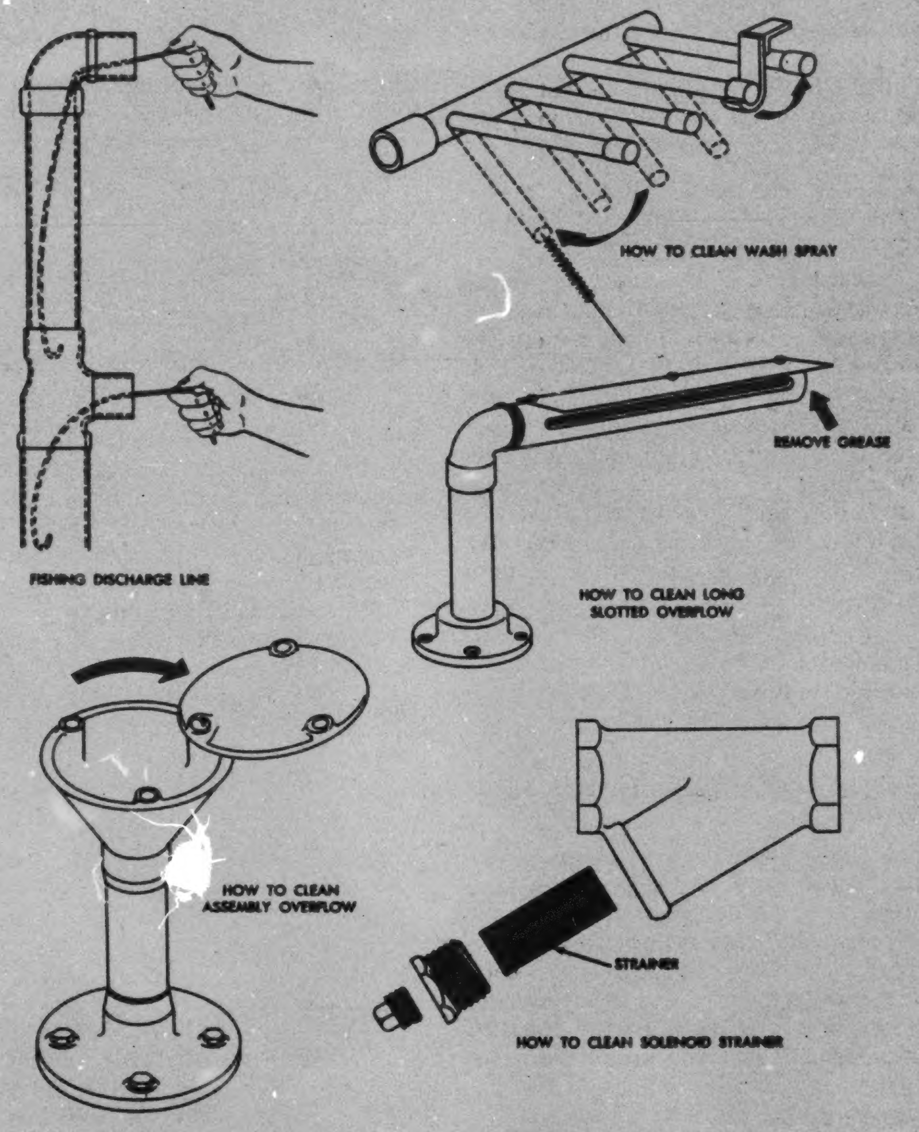
   Measure amounts carefully. Use 7 fluid ounces of orthophosphoric acid 85 percent plus 1/2 fluid ounce detergent, general purpose, for each gallon capacity of the tank when filled to overflow level.

3. Complete filling of the tanks.

   Fill to overflow level.

4. Put scraps trays, spray, and curtains in place.

   Scale deposits on all attachments must be removed.


HOW TO CLEAN WASH SPRAY
FISHING DISCHARGE LINE
REMOVE GREASE
HOW TO CLEAN LONG SLOTTED OVERFLOW
HOW TO CLEAN ASSEMBLY OVERFLOW
STRAINER
HOW TO CLEAN SOLENOID STRAINER

48.36

Figure 5-25.—Cleaning sprays, drains, and strainers or dishwashing machines.

5. Turn on machine.

   Operate the machine at the highest possible temperature for 60 minutes.

6. Turn off the machine and drain.

   Open the drain valves and allow all the cleaning solution to drain from the tanks.

7. Refill.

   Use fresh hot water.

8. Turn on the machine.

Operate the machine at the highest temperature for 5 minutes.

Repeat steps 7 and 8 several times. The entire method should be repeated at such intervals as may be required to assure freedom from interference with efficient operation of the dishwashing machine.

REFRIGERATED CABINET AND SALAD BAR

The salad bar and cabinet are usually one piece of equipment. The salad bar area is a well about 4 to 6 inches deep, made especially for salad pans of various sizes. Some models have a cover which covers the whole area when not in use between meals. The cabinet space located just below the salad bar consists of several shelves for stowing salads after makeup and before serving time.

Cleaning

After each meal the salad bar should be cleaned with warm detergent water and a clear water rinse. The cabinet should be cleaned out at least once a week using a soda solution to keep bad odors down and give it a clean fresh smell.

MILK DISPENSER

The milk dispenser is a refrigerated cabinet especially designed to dispense liquids packaged in special cartons or juices which are placed in reusable stainless steel cans with dispenser spouts on them. Disposable rubber tubes are used on the spouts. When the container is placed in the dispenser then the rubber tube is cut off at 1/4 inch beyond the visible lower termination of the dispensing mechanism. A clean knife or pair of scissors should be used to cut the tube.

All authorized milk dispensers are equipped with a thermometer which has a green range for safe use. The range is from 38° to 44°F.

Cleaning

The milk dispenser should be cleaned after each meal. All outer areas should be wiped clean with a disinfectant solution after each meal.

The dispenser must be defrosted when ice deposits have accumulated to the depth of 1/8 of an inch on the cabinet interior.

SELF-LEVELING DISPENSER

The self-leveling dispensers are used for dispensing bread and dishes. The cabinet is made of stainless steel with a coil spring platform which pushes the plates or bread to the top as they are used. The spring tension may be adjusted according to the weight of the item to be dispensed.

Cleaning

Clean the self-leveling dispenser daily if used for food items and weekly if used for dishes. Wash the dispenser in hot detergent water and rinse in clean hot water (180°F) and let air dry.

VENTILATION HOODS

An accumulation of grease in the ventilation system can cause fire. The vent screens should be taken out and cleaned as often as necessary but at least once a week.

Cleaning

The screens may be cleaned by dunking them up and down in boiling water several times and if the hood is very greasy the water should be changed and repeated. Wash the inside and top of the hood with hot soapy water. Be sure and wash the trough that is usually around the inside edge of the hood.

FOR YOUR SAFETY

To prevent accidents, use the safety devices on galley and meat cutting equipment as directed. Keep your equipment operative at all times. Report defects promptly, via chain of command, to the engineering department.

Of course, all manner of safety devices will not guard against food contamination. Complete cleanliness at all times is necessary. This requires, among other things, diligent care of equipment. When food preparation equipment and utensils are systematically and thoroughly cleaned after each use, the possibility of food contamination and bacterial growth is greatly reduced.

HELP PREVENT FIRE

There is always the danger of a fire breaking out aboard ship; which quite often results in damage to equipment and injury to personnel aboard. The best way to fight fires is to prevent them.

Warn your men about the kind of matches they bring aboard. Navy regulations say that safety matches ONLY are allowed. Require your men to observe the NO SMOKING sign in galley spaces. The sign is placed there for two reasons—one is for sanitation and the other is for fire prevention.

Clean the canopy over the ranges daily. Flames that may reach the canopy from the range won't spread if there is no grease and dirt for them to feed on. Have exhaust fans and ducts over the ranges cleaned at least once a week—oftener if necessary.

Keep galley spaces free of waste materials. Waste paper and rubbish should be deposited in proper receptacles and disposed of promptly.

Do not allow trash to accumulate around electric motors or machines, against steam pipes, or within 10 feet of any range, oven, or fryer, or in places where flammable products (grease) are used or stored.

Inspect regularly fire extinguishers located in galley spaces to see that they are in good working condition. Report those that are faulty to your superior, who will consult with the damage control division concerning their repair or replacement. It is too late to inspect fire extinguishers after a fire starts.

Your men should know how to give the alarm for fires and where firefighting equipment is located, how it is operated, and the principles behind its operation. They should know how to extinguish fires which may occur in galley spaces.

Fires are classified by the Navy into three general kinds, A, B, and C. Your military training courses describe these classes in detail and give appropriate methods for fighting each.

EACH Mess Management Specialist should know where the vent switch is located. The cleaning of screens was covered earlier in this chapter. In case of fire in the galley, the vents should be turned off immediately.

CHAPTER 6

NUTRITION AND MENU PLANNING

Because food is vital to health, vigor and well-being, the MS responsible for menu planning and food preparation must know enough about food and nutrition to plan well-balanced meals for the crew. This includes a knowledge of the kinds of foods required to maintain the crew in good health, the calorie intake necessary for different age groups, the types of nutrients contained in different types of foods, and what each of these nutrients contributes to the maintenance of a well-balanced diet.

The MS should also know which foods are most acceptable to the crew and must plan meals consisting of foods the crew will enjoy. Unless eating is a pleasure, patrons of the enlisted dining facility may not eat enough of the foods that will keep them healthy. Furthermore, their work may suffer because mealtime is not the pleasant time it should be. Therefore, the menu planner must keep a record of food preferences of the crew. This information can be obtained by reviewing the acceptability factor of the menu items from the previous days Food Preparation Worksheet (NAVSUP Form 1090), by listening to comments of the crew, by watching serving lines and tray waste, by gaining information from menu board meetings, and by using a suggestion box.

In this chapter you will learn about the types of foods that are required for well-balanced meals; meals which will provide all the nutrients and energy in amounts needed by the crew. You will not need to know the quantities of each nutrient furnished by individual foods. Nutritionists have simplified this task for you by developing a "Daily Food Guide" that is easy for everyone to use. In the guide, the different foods are sorted into a few large groups on the basis of the nutrient content each provides. Then suggestions are made for the number of servings from each food group which, with servings from the other groups, contribute the kinds and amounts of the many nutrients needed for a well-balanced diet. The menu planner who is aware of how important it is to eat the proper foods will welcome a guide such as this.

Armed with this basic knowledge of food and nutrition given in the "Daily Food Guide" and a record of food preferences of the crew, you will be better qualified to plan meals that will maintain good health and sustain high morale.

FOOD CONTENT AND HEALTH

We need food to give us energy to move, breathe, keep the heart beating, keep warm, and support body growth and upkeep.

Energy is a necessity, but we need food for reasons other than to provide energy. Food supplies a complete variety of substances—nutrients—that are essential for building, upkeep, and repair of body tissue and for keeping the body running in an efficient, orderly manner.

Science has identified many essential nutrients, each of which has special jobs to do in the body—jobs no other nutrients can do. Most nutrients do their jobs best when teamed with other nutrients working in the body at the same time.

Everybody needs the same nutrients throughout life but in different amounts. Proportionately greater amounts are needed for growth of a body than for its upkeep. Normally, boys and men require more food energy than girls and women. Large people need more than small people. Active people need more food energy than inactive ones. People recovering from illness need more than healthy people.

All of the nutrients are obtained from foods, but no one food contains all of the nutrients. People must therefore eat a variety of foods to obtain all the nutrients and energy in the amounts their bodies require. Many kinds and combinations of food can be used to achieve a balanced diet. The "Daily Food Guide" gives as wide a choice as possible among different foods while still assuring a balanced diet. It also gives a good deal of free choice in selecting additional foods to complete the meals and meet the food energy requirements of the crew. The "Guide" pinpoints the foods that contain the key nutrients for: (1) energy, (2) material for building and repairing body tissue, (3) material to regulate body functions.

CALORIES

Food produces energy for the body as fuel produces energy to keep an engine running. The unit used to measure the energy produced by food is called a calorie, which is the amount of heat required to raise the temperature of 1 kilogram of water 1° Centigrade or 1 pound of water 4° Fahrenheit. The number of calories a person needs depends upon the amount and kind of work the person does, the person's age and weight, and the climate. The larger a person is, the more calories he will require. A large active person of 15 may need as many as 5,000 calories a day. An adult man weighing 154 pounds, who does very little physical work, as at a desk job, will need about 2500 calories a day. The same man doing moderately active physical work, as in performing active shipboard duties, will need about 3000 calories a day. If he is in recruit training, he may need 4000 or more a day. Young men 17-25 years of age generally need about 3400 calories per day. Young sailors should get enough calories to support normal growth. Lack of calories will result in loss of weight, whereas too many calories will cause a person to gain weight.

The adjustment in calories required for tropical, temperate, or frigid areas is made by eating more or less food. No great changes in a GOOD diet need be made, except to increase or decrease the total quantity of food served. When the temperature is low and a sailor is exposed to the weather, his caloric requirements might easily be increased by 25 percent or more.

FOOD NUTRIENTS

Proteins, fats, carbohydrates, vitamins, and minerals are known as food nutrients.

Proteins

The most important nutritive elements required by the body are proteins. They are body building materials. They build new tissues, repair old tissues, and regenerate the blood. They provide fuel for body warmth and energy. Certain proteins in the blood help develop resistance, and sometimes immunity to disease. Milk, meats, fish, eggs, poultry, legumes (kidney beans, lima beans, lentils, peanuts), cereals, and vegetables are sources of protein and should be included in the daily meal pattern.

Fats

Fats are the most concentrated source of energy. They provide fuel for body warmth and energy and they are a carrier of fat soluble vitamins. They are divided into two main groups—vegetable and animal fats. Butter, milk, cream, meat fats, oily or dark colored fish, and egg yolks belong to the animal fat group. The seed and vegetable oils are vegetable fats. Butter, oil, and shortening are readily recognized as fat foods. Fat however, is also blended, incorporated, or absorbed in other foods as for example the fat content of avocados, olives, and nuts. The addition of a limited amount of fat to a meal makes the meal more palatable and satisfying.

Carbohydrates

Carbohydrates provide the primary source of energy. Carbohydrates are the most easily digestible, the least expensive, and the most readily available of all the nutrients. Cereals and cereal products, starchy vegetables, sugars, and fruits are sources of carbohydrates.

Minerals

Approximately four percent of the body's weight is composed of mineral elements (calcium, phosphorus, iron, iodine, copper, and so forth). Minerals are the inorganic constituents of the diet and function in three ways. They are constituents of teeth and bones, giving rigidity and permanence to their structure; they are constituents of all soft tissues; and they influence the irritability of muscles and nerves. Although all minerals are important, there are four which must be included daily.

CALCIUM.–Calcium is the builder of bones and teeth. This mineral also contributes to the clotting of blood and regulates or controls normal heart rhythm. It is necessary for normal muscle contraction and nerve irritability. Sources of calcium are milk, cheese, clams, egg yolks, nuts, broccoli, cabbage, cauliflower, mustard greens, and turnip greens.

Milk is the best source of calcium. It is almost impossible to supply the amounts of calcium needed unless milk in some form is used daily and cheese and other milk containing products are eaten frequently. One pint of fresh milk or its equivalent should be served per person per day. If the diet is low in calcium, it is also likely to be low in phosphorus and in riboflavin, the B_2 vitamin. For calcium to be used properly in the body, vitamin D and phosphorus are needed in proper quantities.

PHOSPHORUS.–Phosphorus is necessary for building bones and teeth. Milk, cheese, eggs, meat, legumes, nuts, whole grain cereals, and vegetables are good sources of this mineral.

IRON.–Iron is a component of the bones and of hemoglobin, which gives the blood its color and which carries oxygen to the tissues. The best source of iron is liver. Liver is "meat deluxe" from the standpoint of nutrition. Other good sources of iron are lean meats, egg yolks, dried legumes, green leafy vegetables, enriched breads and cereals, and molasses.

IODINE.–The human body must receive a small but steady amount of iodine to help the thyroid gland work properly. Seafoods are especially rich in this mineral and the salt the Navy buys has enough iodine in it to take care of some of the body's requirements.

SALT.–Salt is needed by everyone. A person needs about 1 level teaspoon of salt per day and more when he perspires a great deal. The average intake of salt is from 2 to 3 teaspoons daily, which is enough for a person drinking up to about 4 quarts of water. A person who is not getting enough salt will become weak.

Water

Water is not a food but it can be far more important than food. A person can live several weeks without food but will die within a few days without water. About three-fourths of the body is made up of water. Much of this water is lost through normal body functions and must be replaced frequently.

The average adult needs about two and one-half quarts of water daily. A large part of this amount is taken in with food, as a large percentage of most foods is water. When a person is working, or during hot weather, the body needs from 5 to 12 quarts of water daily. Water should be taken into the body as it is desired, since thirst usually serves as an adequate guide to intake, except during illness.

Cellulose

Cellulose does not have the function of a food, which is to produce energy; cellulose aids in body activity. It is that woody, fibrous, or semifibrous substance contained in many foods, as for example bran or the soft hemicellulose which is found in fruits and vegetables. Cellulose has been called the broom of the human body because by its own mass it shoves along food and body waste which otherwise might become stagnant in the intestines.

VITAMINS

There are approximately seventy vitamins known to be essentials to human well-being, and each performs one or more special functions.

Vitamins occur naturally in foods in very minute quantities. They are odorless, tasteless, and invisible to the naked eye. They supply no heat to the body and no body-building elements, but they are indispensable to health and normal body functions.

Some vitamins can be stored in the human body; others cannot and must be supplied every day. Vitamins are usually grouped according to whether they are soluble in water or in fat. The water soluble vitamins, B and C, can be leached out of food that is cooked in water and will be lost unless the water is reserved for use in stews, soups, and sauces. These vitamins cannot be stored in the body and must be supplied every day. The fat soluble vitamins are A, D, E, and K.

B Vitamin Complex

The B vitamin family has been broken down into at least ten parts. The whole group is called the vitamin B complex. Three vitamins of the complex are emphasized.

THIAMIN (B_1).–Thiamin (B_1) promotes growth, increases appetite, creates a feeling of well-being, counteracts fatigue, and steadies the nerves. Good sources of thiamine are: lean meat (particularly pork), liver, whole-grain breads and cereals, enriched breads and cereals, legumes, peanuts, and milk.

RIBOFLAVIN (B_2).–Riboflavin (B_2) promotes growth and health. Generally it keeps the eyes, skin, and hair healthy. Good sources are: milk, liver, green leafy vegetables, whole-grain breads and cereals, and enriched breads and cereals.

NIACIN.–Niacin (Nicotinic acid) prevents a disease known as pellagra. It aids in digestion and the health of the skin. The best sources are liver and peanut butter. Other sources are: lean meats; legumes (peas and beans); whole-grain breads and cereals; enriched breads and cereals.

Vitamin C

The first vitamin separated from food was vitamin C. It is known as ascorbic acid. This nutrient helps to keep body tissues in good condition. A lack of this vitamin in the diet of seamen in the early days of the Navy caused the disease known as scurvy. In time, the Navy found that it could successfully fight the disease with foods high in acid content such as lemon, lime, or orange juice. Tender and bleeding gums, hurting and swelling joints and weakened muscles are usually caused by a lack of vitamin C.

Vitamin C is necessary for the regulation of the heart muscle and muscle tone in general. It is also an important element of the substance which holds cells together properly in the body.

Since only a very limited amount of ascorbic acid (vitamin C) can be stored in the body, it is essential that you supply generous amounts in the daily diet. All of the familiar citrus fruits are excellent sources, as are various other fruits.

Other good sources of this vitamin are tomatoes, cantaloupes, raw green foods, fresh strawberries, and even potatoes if cooked in their jackets.

Vitaminn A

Milk, butter, cream, cheese, liver, egg yolk, leafy green and yellow vegetables, yellow fruits, cod liver oils, and other fish liver oils contain vitamin A.

Vitamins help to protect the body against infection and vitamin A helps keep the skin and the lining of the nose, mouth, eyes, and inner organs in good condition. A lack of vitamin A may cause the mucuous membranes around the eyes to become diseased, and a shortage of this vitamin may cause injury to the respiratory, digestive, or excretory systems.

Shortage of vitamin A in the diet may cause night blindness. Experiments with diets of high vitamin A content for aviators and automobile drivers have proved that the increased amount of vitamin A reduces accidents at night. Industry has also found similar results with workers. As you know, the Navy must constantly be on the alert for night blindness in personnel, particularly those required to stand watch duty. Many naval battles of the past have been started at night because the enemy desired to take advantage of the light conditions and the greater difficulties with vision at that time of day.

Vitamin D

The direct rays of the sun or suitable ultraviolet rays change a certain substance in the skin to vitamin D, so it is known as the "sunshine vitamin." The exact needs of adults for this vitamin are not known, but a certain amount is necessary for continued maintenance of the structure of the body. Bones are weakened by a lack of vitamin D. This is a disease known as Ricketts.

Significant amounts of vitamin D are found in only a few natural foods. Fish liver oils, such as cod, are among the richest sources. Salmon, mackeral, tuna, sardines, beef liver, lamb and pork liver, eggs, butter, cream, and whole milk furnish small amounts.

Vitamin E

Vitamin E is essential to growth. It is found in meat, milk, butter, grains, and vegetables.

Vitamin K

Vitamin K is a key element in the clotting of blood. Spinach and leafy vegetables such as cauliflower and turnip greens are good sources of this vitamin.

CONSERVING NUTRIENTS

It is not enough just to select proper foods for the menu. They must be prepared in such a way that valuable nutrients are not lost. Figure 6-1 presents summary information about vitamins. In addition to listing foods which are good sources of vitamins, it also shows conditions under which the vitamin content may be reduced and the effect of their deficiency in the diet. This information will be valuable to you in making and analyzing menus, and also in conserving vitamins during cooking. The term "stability" used in the illustration refers to the ability of the various substances to withstand destruction under the conditions mentioned.

The following cooking rules will, if followed, make your meals more nutritious and add to the general health of the crew.

- Serve fresh fruits and vegetables as soon after you receive them as possible.

- Handle fresh fruits and vegetables carefully, because bruising causes a rapid loss of vitamins.

- Store fresh fruits and vegetables properly until they are used.

- Do not soak vegetables in water longer than necessary to freshen or clean them. Water will dissolve vitamins B_1, B_2, C, and minerals.

- To cook vegetables, place them in rapidly boiling water. Bring the water back to a boil and reduce to a simmer.

- Cook vegetables quickly and just until tender, in order to leave them with some of their original crispness.

- Cook vegetables in as little water as possible.

- Don't throw away cooking water. Save it for use in sauces, gravies, and soups.

- Heat canned vegetables quickly just before serving.

- Shred outer leaves of lettuce, cabbage, and green leaves of celery for use in flavoring soups.

- Serve fruits and vegetables raw in salads.

- Prepare fruits and vegetables for salads just before serving.

- When salmon salad is prepared, save the juice and use it in salad dressing or as part of the liquid for salmon loaf or sauce.

- Prepare hot foods just in time to be served—never prepare them early and reheat them.

DAILY FOOD REQUIREMENTS

The foods which we eat each day must supply the proteins, carbohydrates, fats, minerals, and vitamins which are needed to

Chemical name	A	C	D	Vitamin B complex		
	Carotene	Ascorbic acid	Calciferol	Thiamine (B_1)	Riboflavin (B_2)	Niacin
Important food sources	Liver Egg yolk Vegetables Green Yellow Butter Cream Fish-liver oil	Citrus fruits Cabbage Tomatoes Cantaloupes Strawberries Potatoes in jackets	Fish-liver oil Butter Egg yolk Liver	Pork Liver Organ meats Nuts Legumes Whole wheat Whole grains Wheat germ	Liver Meats Eggs Milk Enriched bread Vegetables Green Leafy	Meat Fish Poultry Liver Green peas
Stability: cooking drying light	Gradual destruction by exposure to heat and drying at high temperature.	Unstable to heat and oxidation, except in acids. Destroyed by drying and aging.	Stable to heating, aging and storing.	Unstable to heat and oxidation.	Stable to heat in cooking, to acids and oxidation. Unstable to light.	Stable to heat, light and oxidation, acids and alkalis.
Lack of this vitamin causes	Night blindness; glare blindness Rough, dry skin Dry mucous membrane	Scurvy Sore mouth Stiff joints Sore and bleeding gums Weak-walled capillaries	Rickets Soft bones Bowed legs Poor teeth Skeletal deformities	Beriberi (man) Poor appetite Constipation Fatigue	Eye sensitivity Cataract	Pellagra

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Figure 6-1.—Summary Information on Vitamins.

maintain the body in a healthy condition. Most foods contain more than one nutrient, but no single food provides all the nutrients in proper quantities. Therefore, it is necessary for the diet to include a variety of foods, and this is accomplished through well-planned menus. To make menu planning easier, foods are grouped according to the substances they provide.

BASIC FOOD GROUPS

The basic food groups enable menu planners to furnish well-balanced meals without the necessity of analyzing each item and then computing its contribution to the diner's health. In fact, this type of analysis would only be possible in a laboratory since the nutrient content in foods is affected by their quality and condition.

The basic four food groups are:

I	Milk group
II	Meat group
III	Vegetables—fruit group
IV	Bread—cereals group

By using the basic groupings and including the quantity (stated as number of servings) indicated for each group, all or a major share of the required protein, calcium, iron, vitamins A and C, and the B vitamins will be provided. These selections will also provide fats and carbohydrates as well as other vitamins and minerals. Of course this does not form the total menu. Additional servings and other foods are included to round out the meal and make it more appetizing.

Foods which are not included in the groupings are butter and other fats, oils, sugars, and unenriched grain products. These are usually combined with grouped foods in mixed dishes, baked goods, desserts, and other dishes. Fats, oils, and sugars enhance or change flavor and improve appetite appeal.

Milk Group

Milk provides calcium plus proteins and vitamins and is used in many forms: fluid, whole, evaporated, skim, dry, buttermilk, and all types of cheese (cottage, cream, cheddar-type, natural or processed). Two or more cups of milk a day are the basic requirement. Cheese and ice cream may replace part of the milk. The amount required to replace a given amount of milk is computed on the basis of calcium content. Common portions of various kinds of cheese and ice cream, and their milk equivalents in calcium are:

1 inch cube cheddar-type cheese = 2/3 cup of milk

1/2 cup cottage cheese = 1/3 cup of milk

2 tablespoons cream cheese = 1 tablespoon of milk

1/2 cup ice cream = 1/4 cup of milk

Meat Group

Meat is the main source of protein in the diet. In addition it contains essential minerals and vitamins. Included in the meat group are beef, pork, veal, lamb, poultry, rabbit, meat products, fish, shellfish, eggs, and, as alternatives, dried beans, peas, nuts, peanuts and peanut butter. Two or more servings are required every day. You may count as a serving, 2 to 3 ounces of lean cooked meat, poultry or fish, or 2 eggs, or 1 cup of cooked dry beans, or 4 tablespoons of peanut butter.

Vegetables–Fruit Group

All vegetables and fruits are included in this group. They furnish vitamins A and C and some of most other nutrients and cellulose. The daily food guide emphasizes those that are valuable as sources of vitamins A and C.

Vitamin A–Dark-green and deep-yellow vegetables and a few fruits are sources of vitamin A. They are:

Apricots
Broccoli
Cantaloupes
Carrots
Chard
Collards
Kale
Mangoes
Pumpkin
Spinach
Sweet Potatoes
Turnip greens and other deep green leaves
Winter squash

Vitamin C–Sources of vitamin C are divided into two groups: Good Sources and Fair Sources:

Good Sources	Fair Sources
Grapefruits or grapefruit juice	Honeydew melon
Orange or orange juice	Tangerines
Cantaloupes	Watermelon
Mangoes	Asparagus
Papaya	Brussels sprouts
Raw strawberries	Raw cabbage
Broccoli	Collards
Green peppers	Garden cress
Sweet red peppers	Kale
	Kohlarabi
	Mustard greens
	Potatoes and sweet potatoes cooked in jacket
	Spinach
	Tomatoes or tomato juice
	Turnip greens

Servings–The menu should provide 4 or more servings every day and should include:

> Vitamin C–1 serving of a good source or 2 servings of a fair source every day.
>
> Vitamin A–1 serving at least every other day.

The remaining servings may be of any vegetable or fruit including those listed above.

Bread-Cereals Group

Bread and cereals furnish many of the B Complex vitamins plus protein and iron. They are the largest supplier of carbohydrates. Foods included in this group are breads and cereals that are whole grained, enriched, or restored. Specifically, this group includes: breads, cooked cereals, ready-to-eat cereals, cornmeal, crackers, flour, grits, macaroni, spaghetti, noodles, rice, rolled oats, and quick breads and other baked goods if made with whole grain or enriched flour.

Plan to include 4 servings or more each day, and if no cereals are to be served, allow an extra serving of bread or baked goods which will make at least 5 servings for this group daily.

You may count as a serving 1 slice of bread, or 1 package of ready-to-eat cereal, or 1/2 to 3/4 cup cooked cereal, cornmeal, grits, macaroni, noodles, rice, or spaghetti.

MENU PLANNING

The cycle menu guide is recommended and stressed by NAVSUP for use aboard ship and at shore stations. A suggested cycle menu is published each quarter by Navy Food Service Systems office in the Navy Food Service (NAVSUP P-476). Each 42 day cycle menu illustrates how a basic cycle menu can be written and used the year round with seasonal variations. Cycle menus enable planners to thoroughly analyze and perfect their menus. Repeated experience with any given cycle menu also can bring about more accurate forecasting of requirements for requisitioning and daily food preparation. The cycle menus offer the menu planner ideas for meal combinations, new foods, and new recipes. Cycle menus illustrate the basic principles of menu planning and the types of daily meals that are necessary for good health. The menu planner makes appropriate revisions to suggested menus in order to adhere to the food preferences of the crew, replenishment schedules, weather, seasons, stocks on hand, and other variables.

It is recommended that the senior MS should require all MSs to read the current issue of Navy Food Service (NAVSUP 476) to keep them abreast of the latest ideas, innovations, and cooking techniques in the food business.

OBJECTIVES OF MENU PLANNING

A menu is a food plan for a meal, or for a day's meals or for longer periods of time. Menu plans are an orderly and systematic way to provide nutritious meals and to meet the requirements of the Navy food service program.

An important goal of menu planning is to obtain maximum endurance for the ships of the fleet so as to ensure adequate food supplies within limited stowage space. Saving the time and energy of food service personnel in the preparation of meals is still another important goal of Navy food service. Last, but by no means least, menu planning for the Navy dining facilities aims to provide the most enjoyable meals possible.

The menu planner aims to write meal plans that are in line with the American standards of good nutrition, that are within prescribed monetary allowances, that are practical to prepare, and that can be prepared with available facilities and personnel.

The skill of the individual menu planner shapes every meal served in the Navy. The Senior MS prepares the draft of the menu on NAVSUP Form 1092 (Figure 6-2). Preparing varied, balanced, and artistic menus for 7 days a week, 52 weeks a year is one of the most demanding tasks personnel face in their food service careers. The person who writes the menu must be completely objective about the items placed on menus for, consciously or unconsciously, the menu writer may favor certain items or be prejudiced against some items.

NAVSUP FORM 1092 (REV. [illegible])
S/N [illegible]

MENU DRAFT

	MONDAY	RECIPE	TUESDAY	RECIPE	WEDNESDAY	RECIPE	THURSDAY	RECIPE
BREAKFAST	Selected fresh fruit		Selected fresh fruit		Selected fresh fruit		Selected fresh fruit	
	Assorted ready-to-eat cereal		Assorted ready-to-eat cereal		Assorted ready-to-eat cereal		Assorted ready-to-eat cereal	
	Chilled orange juice		Chilled grape juices		Chilled apple juices		Chilled tomato juice	
	Fresh milk		Fresh milk		Fresh milk		Fresh milk	
	Fried eggs to order	F-10	Fried eggs to order	F-10	Fried eggs to order	F-10	Fried eggs to order	
	Soft scrambled eggs	F-13	Soft scrambled eggs	F-13	Individual omelets	F-11-5	Individual spanish omelets	F-11
	Hard cooked eggs	F-6	Hard cooked eggs	F-6	Hard cooked eggs	F-6	Cottage fried potatoes	Q-46-2
	Home fried potatoes	Q-47	Grilled smoked ham		Hash brown potatoes	Q-46	Grilled ham slices	L-65-1
	Crisp bacon slices	L-3	Crisp bacon slices	L-3	Grilled sausage links	L-89-1	Grilled sausage patties	L-89-1
	Grilled luncheon meat	L-78	Buttered waffles		Crisp bacon slices	L-3	Cinnamon french toast	D-22
	Golden french toast	D-22	Hot maple syrup		Golden griddle cakes	D-25	Hot maple syrup	
	Hot maple syrup				Hot buttered maple syrup			
	Butter — Jam — Jelly Fresh toast		Butter — Jam — Jelly Fresh toast		Butter — Jam — Jelly Fresh toast		Butter — Jam — Jelly Fresh toast	
	Glazed or cake doughnut	D-18-7	Oven fresh cinnamon rolls		Apple quick coffee cake	D-132	Swedish tea rings	D-7(4)11
	Coffee		Coffee		Coffee		Coffee	
LUNCH	Tomato vegetable soup	P-7	Old fashioned bean soup	P-8-1	Manhattan clam chowder	P-12-1	Cream of mushroom soup	P-14
	Garlic croutons and crisp saltines		Baked tuna and noodle		Boiled New England dinner	L-43	Chicken chow mein	L-150-1
	Steamship round of beef	L-4-1	Grilled pork slices		Simmered corned beef		Cantonese style vegetables	QG-2
	Rare-medium-well done		Country cream gravy	O-17	Buttered potatu halves	Q-77	Oven roast of beef	L-5
	Brown gravy		Snowflake potatoes	Q-57	Steamed cabbage wedges	QG-2	Brown pan gravy	O-16
	Baked Idaho potatoes		Steamed white rice	E-5	Seasoned carrot pennies	QG-2	Snowflake potatoes	Q-57
	w/sour cream	Q-68	Seasoned brussel sprouts	Q-11	Spicy mustard sauce	O-6	Seasoned broccoli spears	QG-3
	Steamed long grain rice	E-5	Buttered hominy	QG-1	Tangy horseradish	O-1-6	Buttered corn kernels	QG-3
	Buttered asparagus	QG-1	Spiced apple sauce	LRS	Hot dinner rolls	D-33	Hot cluster rolls	D-5(1)4
	Scalloped cream style corn	Q-23-1	Hot sesame seed rolls	D-33	Garden salads selection		Garden salads selection	
	Tangy horseradish		Garden salad selection		Boston cream pie	G-32-2	Florida orange cake w/	G-32-10
	Hot dinner rolls	D-33	Peanutbutter cookies	H-24			Butter cream frosting	G-38
	Assorted breads	[illegible]	Assorted breads	[illegible]	Assorted breads	[illegible]	Assorted breads	[illegible]
	Butter		Butter		Butter		Butter	
	Garden salads selection		Chilled pear halves					
	Fresh apple pie or blueberry pie	I-53 I-53-1						
	Coffee — Tea — Milk		Coffee — Tea — Milk		Coffee — Tea — Milk		Coffee — Tea — Milk	
DINNER	Breaded veal steaks	L-99	Chicken noodle soup	P-2-1	Hot chili con carne	L-28	Tomato rice soup	P-6-2
	Choice baked meat loaf	L-35	Newport style chicken	L-144	Crisp spicy tacos	L-21	Breaded fish squares	
	Rich onion gravy	O-17-1	Braised beef cubes	L-14	Mexicana enchiladas	L-106	Smothered swiss steak	L-16-1
	Franconia potatoes	Q-50	Giblet gravy	O-16-1	Smoked ham steaks	L-65-2	Brown onion gravy	O-17-1
	Tossed green rice	E-5-(2)	Golden french fried potatoes	Q-45	Refried beans with cheese	Q-75	French fried potatoes	Q-45
	Buttered baby limas	QG-3	Buttered corn on the cob	QG-3	Spanish rice	E-9	Seasoned cauliflower	QG-3
	Normandie carrots	Q-173	Seasoned sweet peas	Q-43	Hot cloverleaf rolls	D-6(1)1	Fresh snap beans	QG-3
	Hot brown and serve rolls	D-33	Hot parker house rolls	D-6(2)5	Garden salads selection		Hot cluster rolls	D-5(1)4
	Garden salads selection		Garden salads selection		Ice cream sundae	J-12	Garden salads selection	
	Fluffy white cake w/	G-30	Glazed pineapple or cherry pie	I-42 I-53			Miniature sugar cookies	H-27
	French cream frosting	G-46					Chocolate pudding w/	J-14
							Dessert topping	K-16
	Assorted Breads	[illegible]	Assorted Breads	[illegible]	Assorted Breads	[illegible]	Assorted Breads	[illegible]
	Butter		Butter		Butter		Butter	
	Coffee — Tea — Milk		Coffee — Tea — Milk		Coffee — Tea — Milk		Coffee — Tea — Milk	

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Figure 6-2.—A Menu Draft, NAVSUP Form 1092.

Basic training in the scientific principles of nutrition and artistic aspects of menu planning pave the way for objectivity. In addition, the use of informal aids and records, as discussed under separate parts of this section, help the menu writer to control personal choices.

In order for the personnel to follow through on duties in the galley and on the serving line, the menu also must be systematic and efficient from a management standpoint. All facets of food service are influenced by the menu planner. Many of the internal operations as well as the readiness of the ship are affected by the menu.

The goals and standards of Navy food service may be reached and upheld by many approaches to menu planning. Flexibility and adaptability are essential in designing Navy meals. There is no one best way to plan. Even though food operations on two ships may be similar, identical menus often can not be used because of the variance in local conditions.

Planning Attractive Menus

COLOR CONTRASTS.–Too many foods of the same color in any one meal make the meal unappetizing. Salads made of fresh vegetables, fruit, or a combination of fruits and vegetables provide good color contrast for a meal. Carrots or yams will provide good color contrast with a meat course and a green vegetable or salad, but carrots and yams should not be served together. Serve cauliflower when other dishes are colorful, but not with creamed chicken or mashed potatoes.

FLAVOR CONTRASTS.–Foods that have contrasting flavor tempt the appetite. The use of sour or sweet pickles, condiments (mustard, catsup, chile sauce, etc.), spices, and seasonings help to provide these contrasts. Flavor and aroma are so closely linked in our minds that if food smells good it also tastes good. The aroma of meat cooking, eggs frying, or coffee brewing puts people in the right mood for eating. Do everything you can to make the odor of the food agreeable.

TEXTURE–SHAPE CONTRASTS.–Providing various forms and textures of food in the same meal make it more appealing and consequently more appetizing. For instance, with Chop Suey over fried rice, you might serve chow mein noodles, broccoli, or green beans, providing contrast in texture, form, and color.

Variety is very important in cooking. Anyone gets tired of eating the same kind of food over and over no matter how good that food tasted the first time. Try to avoid repeating a menu too frequently.

The climate and the season of the year affects the planning of the menu. The menu planner should take advantage of the seasonal fruits and vegetables available and plan menus accordingly.

Another consideration for the menu planner is the use of custom foods. These are canned, concentrated, prefabricated, compressed, precooked, and frozen foods from which waste and replaceable substance have been removed. Their work-saving, time-saving features are important assets in the developing of a menu. The advantages of custom foods are illustrated by the following presentation:

Convenient
Uniform
Space-saving
Tailored-to-taste
Operationally efficient
Manpower saving

STANDARD MENU FORMAT

You will note that there is a standard sequence in which food items are listed at each meal. A good rule of thumb to remember is that foods in the menu are listed in the order usually eaten in a meal.

Breakfast	Dinner and Supper
Fruit	Salads or Relishes
Cereal	Soup
Milk	Meat
Eggs or substitute	Gravy, sauce or condiments
Sweet rolls and/or toast	Potatoes or substitute
Butter–jam or jelly	Other cooked vegetables
Coffee	Bread or rolls
	Butter
	Dessert
	Beverages

The Menu Draft

The menu draft form (Figure 6-2) provides for a 7-day menu plan. It is better management, however, to plan cycle menus for six weeks or more. In planning a six week cycle menu the stockage objectives can be obtained, the normal operating level of 30 days on board, plus a 14-day safety level in the event normal replenishment is hampered. Refer to NAVSUP P-486 Chapter III.

There is no single way and no definite sequence of steps to be followed by all menu planners. Most meals are planned around the meat as the main dish, and other food items are selected to go along with the main dish. The step method listed below is strongly recommended. Each step is followed across the draft form horizontally.

STEP 1.	Main dishes, gravies, sauces, and accompaniments
STEP 2.	Potatoes, potato substitutes, and vegetables
STEP 3.	Salads and dressings
STEP 4.	Breakfast fruits and cereals
STEP 5.	Desserts
STEP 6.	Breads, spreads, and breakfast pastries
STEP 7.	Soups and beverages

At this point you will recognize that the daily menu is a plan for the day. With this in mind, the drafted menu should be reviewed and analyzed, asking these questions: Did you use authorized and available food items? Did you include the proper amounts of Basic Food Groups each day? Can the items be prepared using the equipment in your galley and the number of personnel on watch to do the work? Can all the foods be ready at the right time? What foods require last minute preparation? Does any meal show items that require a hot and a slow oven at the same time? Is the menu attractive in color, flavor, and texture contrast? Is there sufficient variation from previous menus to avoid monotony?

If all these questions are answered satisfactorily, then you are ready to proceed.

When you have decided what foods you will serve, list opposite each item the recipe card number in the Armed Forces Recipe Service (or your own locally approved recipe). NAVSUP P-486 requires that you do this, and you will find that the listing helps in several ways. Primarily, the menu draft makes clear to everyone concerned exactly what you plan to serve and thus avoids misunderstandings. From these listings the Galley Watch Captain can conveniently assemble the recipe cards which will serve as a guide in planning breakouts.

When you understand the "hows" and "whys" involved in planning the menu, you will appreciate the important role that it plays in promoting efficient operations. Food Service Operations, NAVSUP P-421, discusses in detail the aspects of writing menus. The publication Navy Food Service, NAVSUP P-476 is mailed to all food service officers bimonthly. The Navy food service publications should be read by all food service personnel. In addition to the suggested menu Navy Food Service publishes pertinent instructive information and guides concerning subsistence items, food preparation, and serving hints. In todays Navy calorie control, weight watching, and cholesterol control are being stressed more and more. Cholesterol is a crystalline fatty substance found in the body; it is also found in the blood. Our bodies need some cholesterol but too much cholesterol can have a harmful affect upon the body. The excessive cholesterol tends to stick to and collect on the inner artery walls. This leads to the constriction and hardening of the arteries which reduces the blood flow to and from the heart, and may result in a heart or blood disorder. Foods that are rich in cholesterol are animal fat foods, organ meats, cheese, whole milk, egg yolks, and butter. Excessive use of these foods should be avoided. You can help eliminate excessive cholesterol intake in the diet by the use of skim milk whenever possible, and by trimming the fat from meats.

CHAPTER 7

MEAT, POULTRY, SEAFOOD

In order to plan the meals properly, you must have a thorough knowledge of the cuts, and styles of beef, fish, and poultry. A beef chart is shown in Figure 7-1 indicating the various cuts of beef and the location of the various cuts on the carcass. You must know the proper methods of cooking each item, and you must know the preferences of patrons in your dining facility. Proper meal planning results in good menu variety, cost control, meals of excellent nutritional value, good quality and crew acceptability.

Meat is the flesh of any animal used for food but is generally used to mean beef, veal, pork, lamb, and rabbit.

Meat, poultry, and seafood offer excellent nutritional benefits. (See Chapter 6 on Nutrition) They constitute a major share of the total ration dollar spent. Although some cuts or styles are expensive, many are economical to serve.

BEEF

Beef Inspection

All beef and beef products prepared in establishments operating under Federal Meat Inspection Regulations are branded or labeled as follows: "U.S. inspected and passed by Department of Agriculture"; "U.S. inspected and passed"; U.S. INSP'D & P'SD"; together with the number which identifies the establishment (Figure 7-2). These stamps indicate that the beef and beef products bearing these stamps comply with the inspection regulations of the United States Department of Agriculture (USDA); and that it is wholesome and has been processed under sanitary conditions.

Beef delivered under contract to the military within the continental United States are not accepted unless each item (or the shipping case) bears the inspection stamp or USDA label. Each item must also bear a Department of Defense stamp which indicates that the meat meets all terms of the contract. Inspection stamps are also used by the Department of Defense (Figure 7-3).

After it is determined that the animal is free of disease and meets sanitary requirements, the U.S. Department of Agriculture Stamps are placed on the carcass meat.

GRADES OF BEEF

Beef is graded as prime, choice, good, standard, commercial, utility and cutter. The military services generally purchase only choice and good grades. However, utility grade or better ground beef and beef tenderloins are procured ungraded.

Beef roasts and steaks procured for the Navy are choice grade. Choice grade meats are tender, juicy and flavorful. Some beef items, such as diced beef may be from choice or good grade meat. Good grade beef is not quite as tender, juicy or flavorful as choice grade but if the proper preparation methods are used an acceptable product is produced. Good grade beef has less fat marbling than choice or prime grade beef.

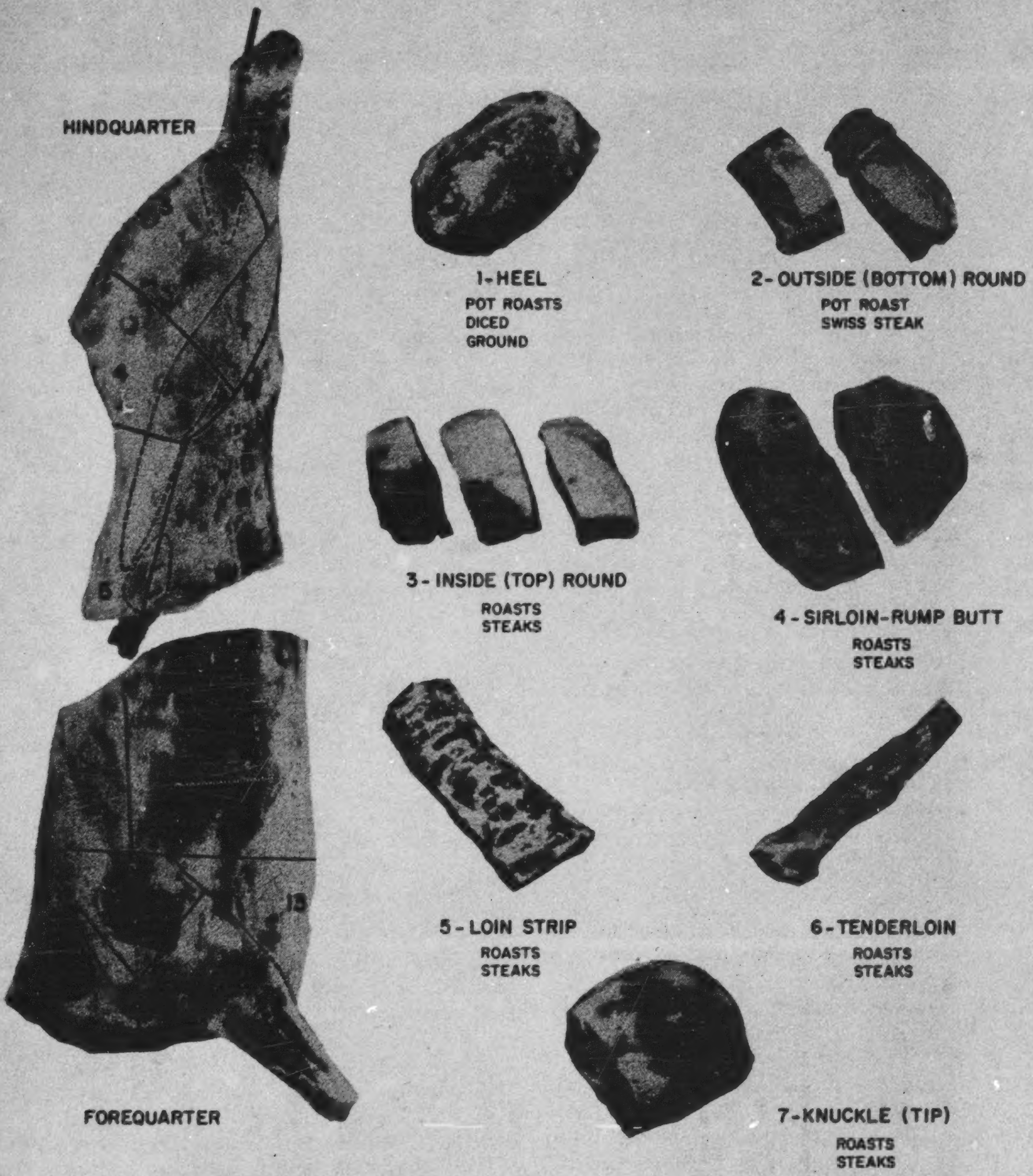
HINDQUARTER
6
FOREQUARTER
13
1-HEEL
POT ROASTS
DICED
GROUND
2-OUTSIDE (BOTTOM) ROUND
POT ROAST
SWISS STEAK
3-INSIDE (TOP) ROUND
ROASTS
STEAKS
4-SIRLOIN-RUMP BUTT
ROASTS
STEAKS
5-LOIN STRIP
ROASTS
STEAKS
6-TENDERLOIN
ROASTS
STEAKS
7-KNUCKLE (TIP)
ROASTS
STEAKS

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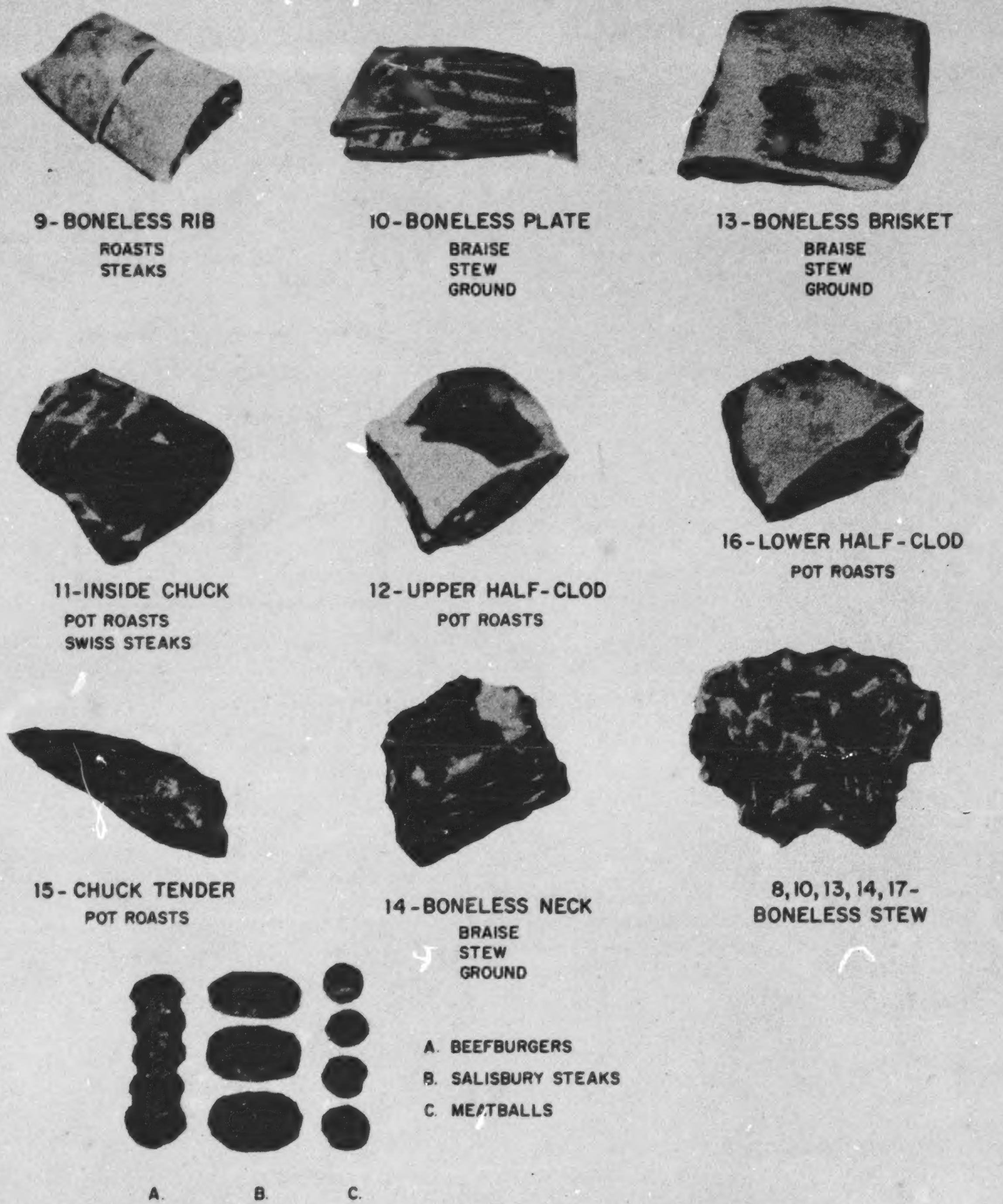
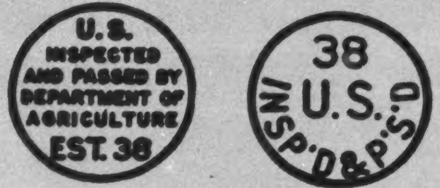
Figure 7-1A.—Cuts in a side of beef.


9-BONELESS RIB
ROASTS
STEAKS
10-BONELESS PLATE
BRAISE
STEW
GROUND
13-BONELESS BRISKET
BRAISE
STEW
GROUND
11-INSIDE CHUCK
POT ROASTS
SWISS STEAKS
12-UPPER HALF-CLOD
POT ROASTS
16-LOWER HALF-CLOD
POT ROASTS
15-CHUCK TENDER
POT ROASTS
14-BONELESS NECK
BRAISE
STEW
GROUND
8, 10, 13, 14, 17-
BONELESS STEW
A. BEEFBURGERS
B. SALISBURY STEAKS
C. MEATBALLS
A.
B.
C.

48.37

Figure 7-1B.—Cuts in a side of beef—Continued.



48.4

Figure 7-2.—Department of Agriculture Inspection stamps.

The term "fabricated" refers to meats which have been either partially or completely boned and trimmed. Many types of meat procured for the Navy dining facilities are fabricated to some extent.

A completely fabricated meat is one which has all bones removed, and is cut into portion sizes or into roasts. An example is boneless beef roasts and steaks.

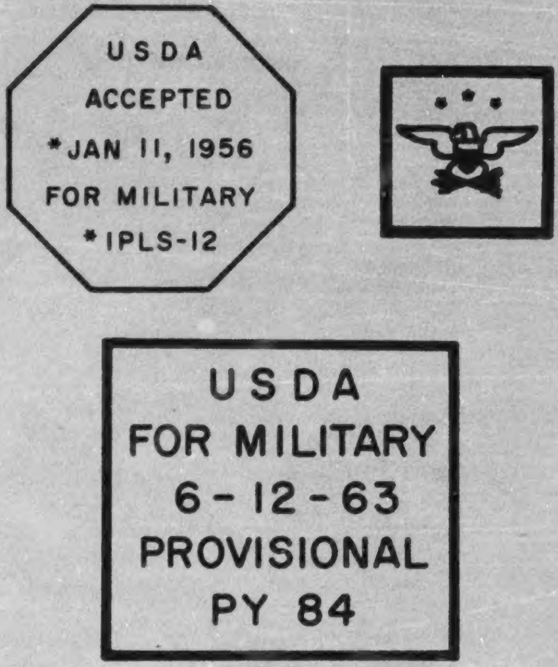
Bladeless pork loin is an example of meat that has been fabricated to a lesser extent. The bladebone and related cartilage are removed to reduce weight and bulk and to facilitate the prepartion and cooking of the meat.

Boneless beef is cut from selected wholesale beef cuts or carcass meat according to specifications of the Armed Forces. The meat is wrapped, packed in shipping containers, and then frozen. Bones, excess fat, gristle, and tendons are removed by the processor.

Identification.—The markings on each case of boneless beef include a code to identify the style of beef (grill, steak, oven roast, and pot roast). The code identification information makes it possible to determine whether or not enough of any one style of beef is on hand to prepare a meal. (Figure 7-4)

Boneless Grill and Swiss Steaks

Grill and Swiss steaks are cut into approximately 7 oz or 6 oz portions, respectively. Both types of steaks are prepared from whole muscles which are then placed into molds shaped to fit the individual, natural muscle; the steaks are then tempered, formed and machine sliced. Grill and Swiss steaks are not formed from pieces of other cuts of meat as are molded style shrimp.



THIS STAMP IS USED BY RESIDENT POULTRY, SHELL EGG, AND EGG PRODUCTS GRADERS.

THE LETTERS "PY" IDENTIFY THE DIVISION AS POULTRY. THE NUMBER FOLLOWING IDENTIFIES THE GRADER PERFORMING THE INSPECTION.

48.5

Figure 7-3.—Inspection stamps of Department of Agriculture and Department of Defense.

Boneless Chuck Short Ribs

The boneless chuck short ribs are portion cut into serving pieces for ease in serving. This new item provides an economical alternative to steaks and roasts.

Type I - Oven Roast

Style 1 Knuckle
Style 2 Inside Round
Style 3 Eye of Round
Style 4 Outside Round

Type II - Pot Roast

Style 1 Chuck Roll (blade-in)
Style 2 Shoulder Clod
Style 3 Chuck Roll

Type III - Grill Steak (weight 6½ to 7½ oz)

Style 1 Ribeye
Style 2 Top Sirloin Butt
Style 3 Loin Strip

Type V - Swiss Steak (5½ to 6½ oz)
(knuckle, inside round, eye of
round, outside round)

Figure 7-4.—Identification of beef roasts and steaks, boneless.

Veal

Veal is immature beef or calves less than one year old. The meat has a grayish-pink color and a smooth, velvety texture; it usually has very little marbling compared to beef.

Veal is also graded by the U.S. Department of Agriculture (USDA), and the top grades—Prime, Choice, and Good or Standard are purchased for the Navy dining facilities.

The Navy procures 3-way boneless veal consisting of slices (cutlet style), roasts, and ground veal. Ground veal may be used to prepare grilled veal patties or combined with ground beef to prepare veal loaf. Breaded veal cutlets, which are flaked and formed into 5-oz portions, are now available for use. The breaded veal cutlets may be deep fat fried or oven cooked with a sauce.

LAMB

CHOICE grade lamb is purchased for use in the Navy dining facilities. Lamb is available in several styles, boneless, chops, and roasts, and lamb riblets. The boneless chops are processed from bone-in, shoulders, and the boneless roasts are fabricated from single, bone-in legs. The lamb riblets are cut into single rib portions. High quality lamb has a smooth covering of clear, white, brittle fat over most of the exterior. The lean is a light red color. The texture is fine grained.

PORK

Pork is USDA inspected and graded, but grade marks are not indicated on the meat for consumer use. The difference in the tenderness, juiciness, and flavor of the different grades of pork is not as great as it is in the different grades of beef.

The flesh of hogs is the lightest in color of all meats. Young pork is white to grayish pink; pork from older animals is darker pink. The flesh should be firm and fine grained and should have a good intermingling of fat and lean.

The Navy procures both fresh and cured pork. The fresh cuts, which may be delivered frozen, are: pork butts (Boston), boneless pork hams, bladeless pork loins, boneless pork loins, porkhocks, pork sausage, diced pork, pork spareribs, and country style ribs and pork tenderloins. Cured products include Canadian style bacon, raw and precooked bacon, boneless cooked smoked ham, smoked pork hocks, and canned ham (pear shaped, pullman shaped, and chunks).

As with beef, pork must be handled, cut, prepared, and packaged according to contract specifications. The curing processes are applied to the basic pork products such as ham, shoulders (picnics), and bacon.

FRESH PORK

The bladeless loin is that portion of the loin which remains after the blade bone and related cartilages and the overlying flesh have been removed. The boned pork loin is the regular cut loin which has been trimmed and boned, cut in half, and the two halves placed together and tied to form a symmetrical roast. If desired, pork chops may be cut from the boneless pork loin.

See Figure 7-5A and 7-5B. Boneless slices are 5-ounce slices of the boneless loin. Pork tenderloin is a muscle which has been removed from the loin section of pork sides. Spareribs are the bony but flavorful rib section. Country style ribs are prepared from the backbone. Frozen pork sausage is available in links, bulk, and pattie styles. All pork sausage products are very perishable and have a short shelf life of 2 to 3 months. Fresh pork hocks and pigs feet are available for use. Pigs feet may be served with cooked greens or as an entree. Fresh pork hocks are uncured and generally served with sauerkraut.

SMOKED PRODUCTS

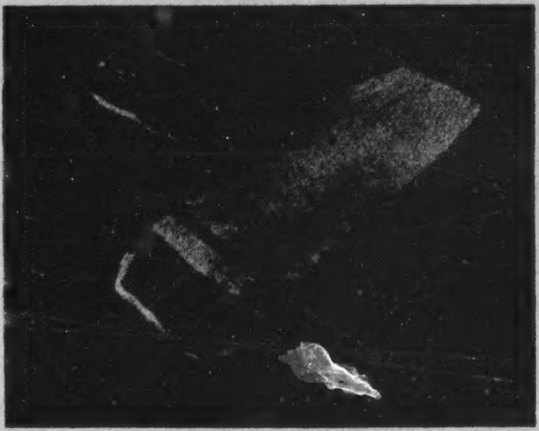
Hams procured by the Navy may be fresh, frozen, canned, smoked boneless, or whole hams. All hams are skinned. Fresh pork hams are frozen and also boneless. They range in weight from 8 to 14 pounds. Canned hams are pasteurized and may be used without further heating, but heating and glazing improves the flavor. They must be stored and kept under refrigeration at all times.

SLICING CANNED HAM.—Canned hams have a high yield, are easy to prepare, and are economical if they are sliced properly. Improperly sliced ham will not only produce uneven portions which are unattractive but will produce more waste and will increase the overall cost. The following slicing technique is recommended in order to obtain the maximum number of usable slices from either whole or canned ham after it is baked or as it comes from the can.

- Divide the whole ham into three sections. Cut the upper third section straight across the butt end, and cut the remaining portion into two even pieces lengthwise.

- Cut the slices lengthwise with the grain, across the butt section. Cut the other sections across the grain as shown in Figure 7-6.

Cutting with the grain, as recommended for the butt section, is contrary to the general rule of meat carving; which is, meat should be carved across the grain to shorten lengthy muscle fibers and tenderize the meat. Canned hams, however, are already tenderized by the curing process used; consequently, the carving of ham is an exception to the cross-grain carving rule. Slicing the ham as described above will produce the highest yield per ham.



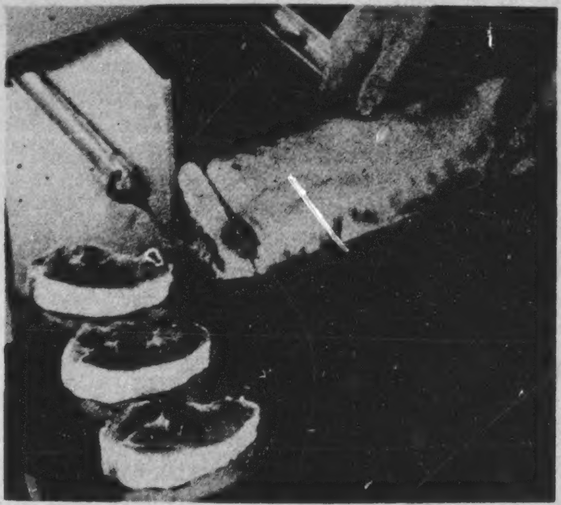
1 – CUT BONELESS LOIN (RIBS REMOVED) INTO CHOPS BY LEAVING ONE SIDE OF EACH DOUBLE CHOP HINGED TOGETHER WITH A THIN LAYER OF MEAT.

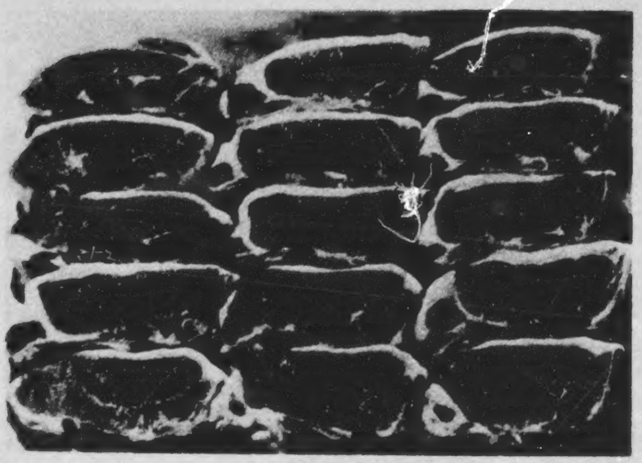
2 – BUTTERFLY CHOPS.

48.98

Figure 7-5A.—Cutting pork chops from bladeless loin.

CUT CENTER SECTION INTO CHOPS WITH POWER SAW. CUTTING CHOPS WITH A CLEAVER IS NOT RECOMMENDED.





CHOPS CUT OF UNIFORM THICKNESS.

48.37

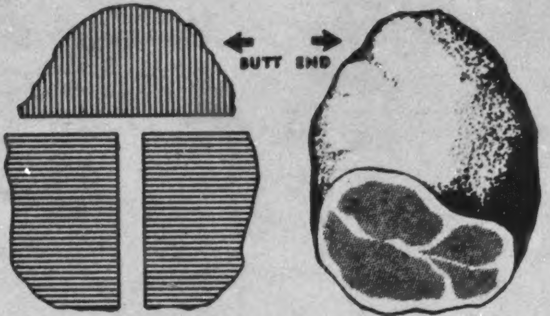
Figure 7-5B.—Cutting bone in pork chops from the loin (machine operation).

OTHER SMOKED PORK PRODUCTS.—Bacon is served more frequently than any other pork product. Frozen raw or canned and frozen precooked items are available. Precooked frozen and canned bacon require only heating to a serving temperature. They save space and reduce waste. Although initially more expensive, each pound of precooked bacon is equivalent to 2 1/2 pounds of raw bacon.

Smoked pork hocks may be cooked and served as a main course or used to season cooked greens.

RABBIT

Like other lean meats, poultry, and lean fish, rabbit is a good source quality protein. Cut-up rabbit is procured for the Navy dining facilities.



48.45

Figure 7-6.—Slicing boneless ham.

The rabbit is cut into pieces similar to the cuts used for chicken. The ready-to-cook rabbit requires little preparation prior to cooking.

MEAT COOKERY

Meat is by far the most popular food item on the menu; it is also the most expensive.

The method used to cook meat is determined primarily by the kind of meat and the tenderness of the cut. Tough cuts require moist heat and long slow cooking.

COOKING METHODS

1. Dry heat: baking and roasting
   broiling
   grilling
2. Moist heat: braising stewing
   steam cooking
   simmering pan broiling
3. Frying: pan frying or sauteeing
   deep-fat frying
   oven frying

Dry Heat Methods

Tender cuts of meat are usually cooked by dry heat methods because they contain very little connective tissue (Figure 7-7).

[1]BEEF	VEAL
Carcass Spencer roll (or rib eye Sirloin tip Tenderloin **Boneless** Sirloin	**Carcass** Leg Loin Rib Shoulder (boned) **Semi- and Boneless Roasts** Top round Bottom round Clod Sirloin rump butt Chuck
PORK	**LAMB**
Hams Fresh Smoked **Loin**	**Carcass** Leg Loin Rack Shoulder

[1] The following beef cuts are roasted or used for pot roast:
Carcass — inside round, knuckle
Boneless — top round, knuckle tip, rump, eye of round.

48.102

Figure 7-7.—Meat cuts suitable for oven roasting (Dry Heat).

ROASTING.—Roasting is synonymous with baking but the term baking is seldom used when speaking of meat cookery, except in the case of ham, meatloaf, fish and some chicken dishes. The term "roasting" is used when meat and poultry are cooked uncovered and are carved or sliced after they are cooked.

The following rules pertaining to roasting apply to beef, veal, pork, and lamb. Included with each rule is the "why."

- Use a moderately low oven temperature (325° F) because, the roast will be uniformly done throughout, the cooking losses will be moderate, the meat will be more palatable and the roast will be plump and full. High temperatures cause excessive shrinkage, uneven cooking, and decreased juiciness and tenderness.

- Do not sear meat before roasting. Searing toughens the outer layer of meat, increases cooking losses, causes a loss of fat, and contributes to excessive shrinkage.

- Place roast fat side up on the pan. This eliminates basting; as the meat cooks, it will baste itself with the melting fat.

- Add salt to the roast before or after it is cooked. Salt penetrates less than half an inch below the surface and any salt added before the roast is cooked adds flavor to the drippings.

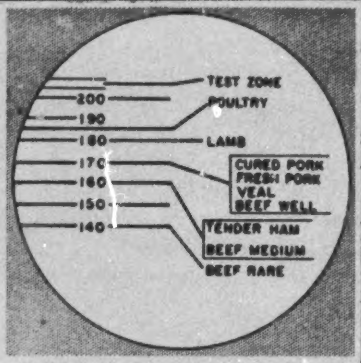
- Unless specified in the Armed Forces Recipe Service recipe, never cover a roast. If the roasting pan is covered, the moisture escaping from the meat will surround it and the meat will be cooked by moist heat.

- Do not add water. Roasts cooked without water are juicier and more flavorful. The only reason for adding water would be to keep the drippings from becoming too brown. This will not happen, however, when low oven temperatures are used.

- Do not flour the roast. Dripings from a floured roast may be a more attractive brown, but the same results can be obtained by browning flour in the drippings when you make the gravy.

- Use a meat thermometer to tell when the roast is done. The meat thermometer is the only accurate measure of doneness. The length of cooking time depends on the temperature of the oven, the weight and shape of the roast, and the kind of meat. A dial-type meat thermometer is shown in Figure 7-8.

The thermometer should be inserted into the center of the main muscle (the thickest part of the meat) so that the tip of the thermometer does not touch the bone, gristle or the fat. As the heat from the oven penetrates the meat, the internal temperature at the center of the roast gradually rises and this rise is registered on the thermometer. When the thermometer registers the desired temperature doneness for that particular kind of meat, the roast is ready to be removed from the oven.



CAUTION: Using thermometer in oven above 400° F is not recommended.

1. The roasting temperatures indicated on the thermometer are approved by the National Live Stock and Meat Board and Poultry and Egg Board (National).

2. Insert thermometer at least 2 1/2 inches into thickest part of meat at an angle such that dial is easily readable when door is opened. The point should be in the center of the largest muscle, away from contact with bone, gristle or fat.

48.49

Figure 7-8.—Dial type roast meat thermometer.

- Boneless meat will require a somewhat longer cooking period than meat with bones. A smaller roast requires more minutes per pound than a larger one. Follow the Armed Forces Recipe Service recipe which specifies the type of meat required and the proper cooking temperature.

GRILLING.–In grilling, the meat is placed directly on the ungreased griddle. The heat is transmitted to the meat from the hot metal of the griddle. A moderate temperature is maintained which prevents the meat from over-browning. Enough fat cooks out to keep the meat from sticking. Excess fat should be removed as it collects to prevent the meat from frying. Tongs or a food turner should be used to turn the meat. Do not use a fork to turn the meat because puncturing the meat with the tines of a fork allows the juices to escape. If the juices escape the meat becomes dry and coarse.

Check the Armed Forces Recipe Service for cuts of beef, lamb, and pork which may be grilled (Figure 7-9).

Pork requires thorough cooking to bring out its full flavor. Braised pork chops are more desirable from the standpoint of aroma, texture, tenderness, and flavor of the lean meat. If pork chops and pork steaks are grilled, they require additional cooking in the oven to ensure complete doneness. Veal is usually not grilled because it is a lean meat and has an abundance of connective tissue which requires long slow cooking.

Grilled meat is usually turned only once. The seasoning is applied to the cooked side just after it is turned.

Moist Heat Methods

Braising and stewing are the two methods used for cooking the less tender cuts of meat which have a considerable amount of connective tissue (Figure 7-10). A higher internal temperature is reached in the meat much quicker with moist heat, which uses steam or water as the cooking medium, than with dry heat.

BEEF	HAM
Carcass Sirloin Rib Club Tenderloin Ground beef	Smoked Ham slices Bacon Sausage
Boneless Portion-Cut Steaks Rib eye Loin strip Sirloin butt Tenderloin cuts	**LAMB**
Ground Meat	Carcass Leg chops Shoulder chops Loin chops
Beef Liver	Semi-Boneless Rib chops Loin chops Leg chops

48.103

Figure 7-9.—Meat cuts suitable for griddle broiling.

BEEF	PORK	VEAL
Fresh Neck Shank Plate Heel of round Brisket Shortribs	Cured Whole ham Half ham Shoulder Picnic shoulder Boston butt Spareribs	Neck Shank
Cured or corned Rump Brisket	Fresh Spareribs	

48.106

Figure 7-10.—Meat cuts that are cooked in liquid.

BRAISING.—Braising is used in the preparation of tough cuts of meat (Figure 7-11). To braise, meat is browned in a small amount of added fat, then covered and cooked slowly in the juices from the meat or in a small amount of liquid which is added. The liquid may be water, stock, vegetable juices, thin sauces, or a combination of these liquids. Just enough liquid to start the natural juices in the meat should be used. Only a small amount of liquid should be added at a time as the color and appearance of both the meat and gravy are better if the liquid is kept to a minimum. Pot roast and Swiss steak are examples of this method of moist heat cooking. Flavor is improved by dredging the pieces of meat in seasoned flour then browning them in a small amount of fat, or by marinating the meat in a well-seasoned mixture of vinegar, vegetables, and spices (such as sauerbraten). Browing the meat develops flavor and aroma, and a rich brown color is typical of well-prepared braised dishes.

After the meat has been browned, the temperature is reduced, and cooking is continued at a low temperature so that the liquid will not boil. Braising may be done in the oven, on top of the range in a deep pot, or in the steam-jacketed kettle. Whichever means is used, the container must be tightly covered. The aim of braising is to produce a piece of meat which is

BEEF

- Boneless Roasts
  - Shoulder clod
  - Inside chuck
  - Rump
  - Bottom round
  - Sirloin tip
  - Chuck tender
- Boneless Beefsteaks
  - Shoulder clod
  - Bottom (outside) round
  - Inside chuck
  - Bottom sirloin butt
  - Chuck tender
- Carcass Beef Roasts and Steaks
  - Chuck (all cuts)
  - Brisket
  - Plate
  - Flank
  - Outside (bottom) round
  - Heel of round
  - Rump butt
- Variety Meats
  - Liver

PORK

- Loin
  - Chops
- Spareribs
- Fresh Ham Steaks
- Tenderloin

VEAL

- Boneless Roasts
  - Top round
  - Bottom round
  - Clod
  - Sirloin rump butt
- Chops
  - Back
  - Tenderloin
  - Butt
  - Knuckle

48.104

Figure 7-11.—Meat cuts cooked by braising.

evenly browned on the exterior, tender, juicy, and evenly cooked throughout, with no stringiness. Meat cuts which are braised are always cooked to the well-done stage. Check the Armed Forces Recipe Service recipes for the cuts of meat which are braised.

STEWING.—The second method of moist heat cooking is stewing. It is the method used in preparing the least tender cuts of meat. Small pieces of meat cooked in water are said to be STEWED: large pieces are said to be SIMMERED. In each case, the meat is covered with water and simmered—kept just below the boiling temperature. It is never boiled. Boiling the meat for the length of time required to tenderize it will dissolve the connective tissue completely and the meat will fall apart and become stringy and dry.

Vegetables may or may not be added to the stew. If they are added, they should be cooked to the "just tender" point, and should still retain their color, shape and flavor after they are cooked. The gravy should be light and smooth and have the same flavor as the meat. The meat is dredged in seasoned flour and browned in a small amount of fat. Stews are made in a steam jacketed kettle which has a hinged lid. The stew should be held at the simmering temperature until the meat is done, usually about 2 hours. Meat cooked in liquid is tender and juicy and holds its shape when sliced. Usually the steam-jacketed kettle is used so that the meat can be completely submerged in the liquid at all times.

Frying

Meat may be fried in deep fat, in a pan with a small amount of fat, in the oven by PAN FRYING or by SAUTEEING.

Shallow pan frying or sauteeing is accomplished on the range or griddle in a pan with just enough fat to keep the meat from sticking. This method of cooking is sometimes more economical and less work when a small amount of food is to be fried.

The fat should be heated to the proper temperature before the meat is placed into it; otherwise, the meat will absorb too much of the fat and will be unappetizing. The correct temperatures are indicated on the recipe cards.

Liver, any tender meats (such as grill steaks) and meat mixtures which are breaded or floured may be fried with good results.

DEEP-FAT FRYING.—Deep-fat frying is accomplished by completely immersing the meat in deep fat and allowing it to remain in the fat until it is done.

Meat which is to be deep-fat fried should be breaded to prevent the excessive loss of moisture. It is also important to have the fat at the proper temperature. If it is too hot the exterior of the meat will brown excessively before the interior has had time to cook. If it is too cool, the meat will absorb too much fat and be greasy. A deep-fat thermometer is the only accurate way to determine the temperature of the fat.

For best results, the pieces to be fried should be of uniform size, and the basket should not be overloaded. Just enough pieces should be placed in the basket to completely cover the bottom of the fry basket. This method permits the hot fat to completely surround the meat and ensures thorough cooking. When the basket is overloaded, the fat is cooled excessively, and the hot fat cannot circulate freely.

Fry only one kind of food at a time. Fry the meat as quickly as possible and only as needed (practice "batch cookery"). Drain to remove excess fat after cooking, then salt or season. NEVER SALT OR SEASON FOOD DIRECTLY OVER THE FRYER. See chapter 4, Food Service Operations for information on deep fat frying fats.

OVEN FRYING.–Oven frying is similar to baking or roasting except fat is added. Food may be oven fried with or without breading.

Cooking Frozen Meats

Most of the meat procured for use in the Navy dining facilities is frozen. Most cuts of meat should be thawed or tempered before they are cooked. Bulk hamburger and diced meat must be completely thawed before they are cooked.

If cooked in the frozen state, roasts will require approximately 1/3 to 1/2 additional cooking time. Seasoning must be delayed until the outside is somewhat thawed and the surface is sufficiently moist to retain salt, pepper, and flour. The insertion of the meat thermometer can be delayed until the roasts are partially thawed.

Grill steak, hamburger patties, pork chops (slices), and lamb chops must be tempered before cooking. To temper meat–remove from freezer and place under refrigeration for a period of time sufficient to facilitate separation and handling of frozen product. Internal temperature of the food should be approximately 26° F to 28° F. The additional time required to cook meats completely done while frozen ties up the cook's time, as well as grill space. Grill steak should never be completely thawed before grilling. Once thawed, the steaks will be dry and tough. Some styles may also fall apart.

POULTRY

Poultry is a menu favorite. Chicken, duck, rock cornish hens and turkey are the poultry items authorized for use by the Navy dining facilities.

Poultry is available in various styles:

- Chicken
  - Broiler/fryer, frozen, cut up, w/o backs, necks, or giblets
  - Broiler/fryer, frozen, whole
  - Broiler/fryer, separate parts (breasts, thighs, or legs)
  - Broiler/fryer, quarters canned, boned
- Duck, frozen, whole
- Rock Cornish Hens, whole
- Turkey
  - Frozen, boneless, cooked
  - Frozen, boneless, raw
  - Frozen, whole, ready to cook
  - Canned, boned

All of the above poultry that the Navy procures will have been dressed and thoroughly cleaned inside and out, and will have been inspected to ensure wholesomeness.

INSPECTION AND GRADING

All poultry is inspected by the USDA or by the state under USDA guidelines. This is your assurance that the poultry has been processed under sanitary conditions.

Poultry may also be graded as to quality. Grading is done according to overall appearance, meatiness, amount of fat, and the presence or absence of defects (torn skin, discoloration, bruises, and so forth).

USDA Grades A, B, and C are used to indicate poultry that has been officially graded.

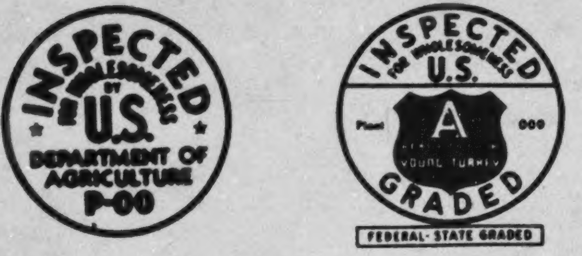
Grades B and C are not as attractive as Grade A but are wholesome. They may have defects and faulty conformation, and could be lacking in meatiness and fat cover. Examples of inspection and grade stamps are shown in Figure 7-12.

THAWING AND CLEANING

All poultry must be thawed before it is cooked and should be thawed under refrigeration at temperatures of 36° F to 38° F.

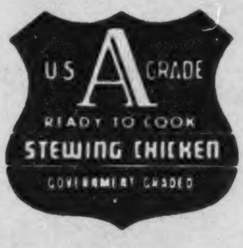
Thawing time will vary depending upon the size and market form but will usually require 18-24 hours for chicken and 24-48 hours for large turkeys (14 to 24 pounds). The temperature of the thawing space and the amount of circulating air also has an effect on the time required. DO NOT THAW POULTRY IN WATER.

Most whole turkeys and chickens come bagged in paper or plastic materials which serve to protect the poultry. For more rapid thawing, remove the whole birds from the outer shipping containers; loosen the inner bag or wrapping material but do not remove the wrapper. Spread the poultry out to permit good air circulation.



U. S. INSPECTION STAMP

COMBINED U. S. INSPECTION AND GRADE STAMP



U. S. GRADE STAMP

48.4

Figure 7-12.—Inspection and grade stamps for poultry.

Layer-packs of cut-up chicken should be removed from the carton and spread out. The chicken should be covered by wax paper or other suitable material to protect it while it is thawing.

Since bacteria thrive on wet or moist surfaces and grow especially well in poultry, the poultry should not be held longer than 24 hours under refrigeration after it has thawed. Extended storage at 36°-38° F not only risks contamination but also results in reduced quality of the meat.

After the poultry has thawed, inspect for and remove any spongy red lung tissue inside the back. Also remove loose membrane, pinfeathers, or skin defects. The necks and giblets are packed inside the body cavity of whole poultry; they should be removed. The poultry should then be washed, inside and out, under cold running water, and drained.

COOKING POULTRY

In moist-heat methods, the water should simmer rather than boil to avoid the toughening effect of high temperature on the fibers. Depending upon the cooking method used, temperatures will vary, but slow to moderate temperatures should be used at all times to develop maximum flavor, tenderness, color, and juiciness. Intense heat will harden and toughen the protein, shrink the muscles, and dry out the juices, thus producing a less palatable product. All poultry should be cooked to the well done stage. Follow the AFRS directions for preparation.

DRY HEAT METHODS

Roasting

Care must be taken to prevent the poultry skin from becoming too hard and dry while it is roasting. To prevent dryness, rub the skin of the chicken or turkey thoroughly with salad oil or shortening. This is not necessary for duck because of its high fat content. If self basting turkey is supplied, follow the package instructions for cooking. Place the poultry in an open pan, breast side up, on a V-shaped rack if available. A low oven temperature (350° F) should be used for chicken and rock cornish hens. Duck and turkey are cooked at 325° F.

If the bird starts browning too soon, aluminum foil may be placed over it to prevent over browning. The formation of a hard, dry crust can be prevented by occasionally basting the bird with pan drippings during roasting.

As turkey is larger than most other poultry, it is more difficult to cook to the well-done stage without overdoing it. Care must be taken to cook it no longer than necessary; overcooking will result in the loss of juices and stringy, dry meat. The use of a meat thermometer inserted in the thickest part of the thigh muscle will give the internal temperature of the turkey. When the thermometer registers an internal temperature of 180° F to 185° F, the turkey has reached the required stage of doneness. The AFRS contains a time table for roasting unstuffed turkeys.

Frying

PAN FRYING.–To pan fry poultry, wipe the pieces dry, season them with salt and pepper, and roll them in flour. If a heavier coating (crust) is desired, dip the pieces in batter or a milk-and-egg mixture and roll them in soft bread crumbs before they are fried. Put approximately 1/2 inch of frying fat in a heavy frying pan and preheat to a temperature of 360°-365° F. Add the pieces of poultry to the hot pan. Turn the pieces frequently. Use tongs or two spoons to turn the pieces. Do not use a fork because puncturing the meat with the tines of the fork allows the juices to escape. Cook until well done.

OVEN FRYING.–Dip the pieces of poultry in flour, milk and egg mixture, then into crumbs. Place poultry in a shallow pan. Pour the fat over the pieces to ensure even coating. Cook in the oven.

DEEP-FAT FRYING

To deep-fat fry poultry, wipe the pieces dry, season them with salt and pepper, and roll them in flour. If a heavier coating (crust) is desired, dip the pieces in batter or a milk-and-egg mixture and roll them in soft, bread crumbs before they are fried. Place enough fat in the pan to completely cover the pieces of poultry. Preheat the fat to 325° F, then carefully lower the pieces into the fat. Do not crowd. The chicken may be cooked until done, or it may be browned in deep-fat and placed in the oven to complete the cooking. Always allow the fat to regain the proper temperature before reloading the fryer.

DRESSINGS

The terms "stuffing" and "dressing" are often used interchangeably, but they both actually refer to dressing. If the dressing is cooked inside the poultry it is referred to as stuffing.

Poultry stuffed with dressing is not recommended for large scale food operations such as the enlisted dining facilities because it increases cooking time, imposes a larger workload on food service personnel and it does not improve or enhance the flavor of the meat. Most importantly, stuffing poultry is a sanitation risk and increases the possibility of food-borned illness.

The recipe service includes the basic bread dressing recipe and its many variations which may be served with either chicken or turkey.

Excellent dressings can be prepared that are not cooked inside the birds. Pan-baked dressing requires more moisture and is less firm than stuffing, but is easier to prepare and easier to serve. Good dressing is light and moist, not heavy and pasty.

Duck contains a much higher percentage of fat than other poultry and stuffing in duck is less palatable because it absorbs so much of the fat during cooking. Ducks may be stuffed with bread or apples for the purpose of absorbing some of the fat; the stuffing may then be discarded at the end of the cooking period.

Giblets

The giblets (gizzard, heart, and liver) need no preparation other than ordinary washing in cold water prior to cooking. One precaution–the liver should be inspected closely to detect any sign of bile contamination. The bile sack is often broken during its removal from the liver. Bile damage is easily recognizable by a greenish-brown or yellow color on the liver. Any liver indicating bile damage is unfit to eat and must be discarded.

After washing the giblets in cold water, place them in just enough cold salted water to cover, bring to a boil, then reduce the heat and simmer approximately 1 hour or until they are tender. (Liver cooks much faster than gizzards and should be cooked separately.) Save the stock and chop the giblets (do not grind) for use in the gravy or dressing. Refrigerate them until they are ready to use.

Turkey Rolls

The Navy procures boneless, frozen, cooked, and uncooked turkey rolls. These rolls consist of light and dark meat. The instructions for preparing each type are included with the specific turkey roll and recipes are included in the AFRS. The boneless turkey roll is equal in quality and flavor to whole turkey, and it is easier and faster to prepare. It also permits accurate portion-control, saves storage space and eliminates waste.

Turkey Carving Procedures

Roast whole turkey is usually carved in the galley. The carving technique described below is the procedure that should be followed for carving turkey in the galley and will provide generous, accurate portions (Figure 7-13).

Let the turkey stand for about 30 minutes after it is removed from the oven before carving. This will allow the juices to be absorbed, the flesh to become firm and the turkey can then be sliced with greater ease and efficiency.

To carve the turkey follow the procedure outlined below.

- Use a sharp, long-bladed knife. Place the legs to your right if you are right-handed, to the left if you are left-handed. Carve the side away from you.

- Remove the leg by holding the drumstick firmly with the thumb and forefinger. Cut through the skin by drawing the knife back and forth, and sever the joint. Press the leg away from the body with the flat side of the knife. Cut the remaining skin on the back. Remove the oyster (choice, dark meat in spoon-shaped bone on back) with the leg.

- Disjoint the drumstick and the thigh by holding the leg at a right angle to the board. Cut through the meat to the bone; then, hold the thigh with the knife, and press down with the other hand until the joint snaps.

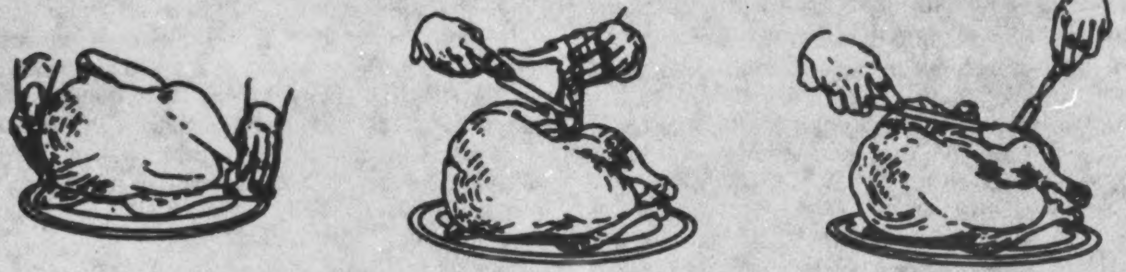
- Slice the leg meat by holding the drumstick at a right angle to the board, cutting down; turn the leg to get uniform slices. To slice the thigh, straddle the bone with a fork and cut into lengthwise strips.

- Remove the wing by placing the knife at a right angle to the breast, about 1 1/2 inches above the wing, and cut straight through the skin and the wing joint.

- To remove the breast from the back, insert the knife along the top and cut slowly, guide the knife along the curve of the rib section. Remove the breast in one piece. Place the breast on the slicing board and slice pieces 1/4 inches thick. You may slice the breast meat directly from the bird. Hold the bird with a fork straddling the breastbone or insert the fork in the ribs opposite the side being carved. Start the first slice just above the place where the wing was removed and with the knife paralled to the breast; use a sawing motion and cut the slices about 1/4 inch thick.

- Arrange the sliced turkey in shallow pans; fill one half of the pan with white meat, and the other half with dark meat. Cover the pan to keep the meat moist and appetizing. A small amount of broth maybe added, if desired.

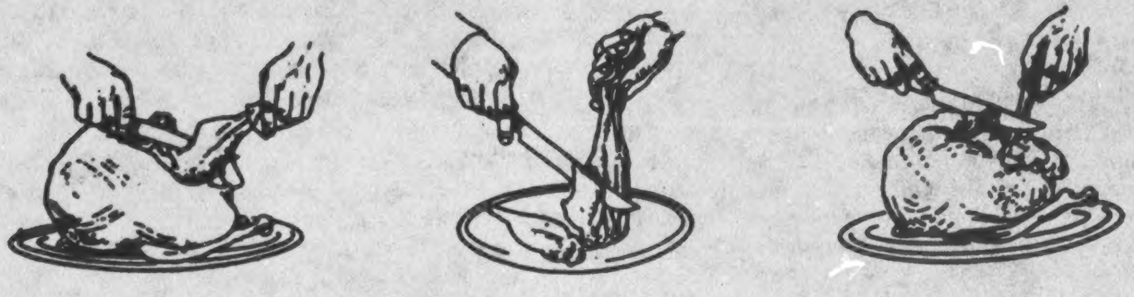
- Place the sliced turkey in the steamtable inserts. Do not permit the steamtable temperature to go above 200° F as the meat will become dry and continue cooking.



1. CARVING POSITION – FIRST MOVE TURKEY COMFORTABLY CLOSE AND TURN IT ON ITS SIDE, BREAST AWAY FROM CARVER.

2. REMOVE WING – NEXT RAISE WING AND CUT IT OFF AT THE SECOND JOINT. SET WING ASIDE FOR OTHER DISHES.

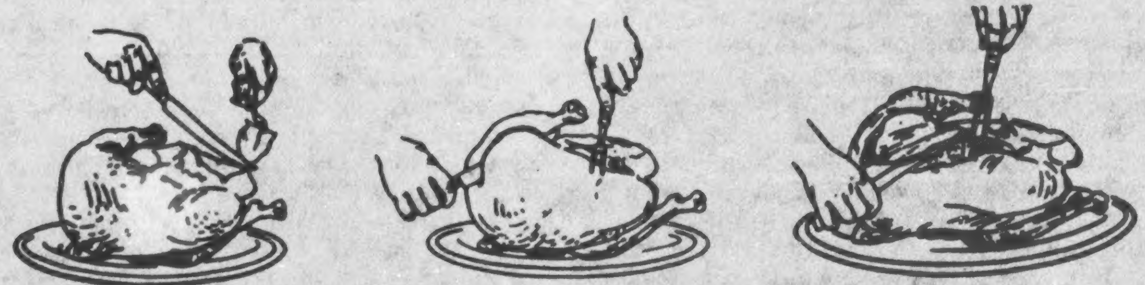
3. BARE THIGH BONE – SLICE DARK MEAT OFF DRUMSTICK AND THIGH UNTIL THIGH BONE IS EXPOSED.



4. REMOVE DRUMSTICK – LIFT DRUMSTICK WITH NAPKIN AND CUT OFF AT THIGH JOINT, LEAVING THIGH ON BIRD.

5. MEAT FROM DRUMSTICK–SLICE AWAY DARK MEAT FROM DRUMSTICK.

6. CUT AWAY THIGH BONE–CUT AROUND THIGH BONE WITH KNIFE AND REMOVE FROM BIRD, AS PICTURED HERE.



7. SLICING DARK MEAT – SLICE DARK MEAT AWAY FROM TURKEY JUST ABOVE REMOVED THIGH BONE. ARRANGE NEATLY ON PLATTER.

8. BASE CUT–MAKE DEEP VERTICAL CUT IN BREAST JUST IN FRONT OF WING JOINT TO SERVE AS BASE FOR ALL BREAST SLICES.

9. BREAST SLICES–START FROM CENTER OF BREAST AND CUT TOWARD YOU, REMOVING SLICES ONE BY ONE AS SHOWN.

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Figure 7-13.—Turkey carving procedure.

- To complete the trimming of the bird cut all remnants off the carcass. This meat can be used for sandwiches, creamed, or ala King dishes and soups.

There are two advantages to this method of carving. It ensures portion control and makes it possible to use all meat on the carcass and avoids waste.

On special occasions roasted whole turkey may be carved on the serving line. This allows everyone to see and share in the festivity which a holiday bird symbolizes.

Be sure to store all unused portions of the bird properly. Place the sliced meat on a tray and cover it loosely with waxed paper before it is placed in the refrigerator. Place trimmings and other edible parts in the refrigerator if they are not to be used immediately.

Carving Boneless Turkey Roll

Boneless turkey roll may be roasted in the frozen state. If cooked while frozen allow one to two hours additional cooking time. If the turkey starts to become too brown, place a piece of foil loosely over the bird for the last hour of cooking. After the turkey is roasted, let it stand for at least 30 minutes, preferably 1 hour, before it is served, so that the juicies can be absorbed and the turkey can be sliced more easily and effectively.

If feasible, machine slicing of boneless turkey is preferable to hand slicing.

The following method of slicing is recommended.

- Remove the netting and skin.
- Cut in slices about 1/4 inch thick.
- Place the slices in a shallow insert pan and cover with aluminum foil.

SEAFOOD

Like meat and poultry, seafood products are excellent protein foods and an excellent source of minerals and vitamins.

There are more than 200 species of fish and shellfish sold in the United States. If you are looking for variety, they give you more choice than any other food group. You can buy fish and shellfish–fresh, frozen, and canned.

The types of seafood procured by the Navy for use in dining facilities are listed in Figure 7-14. These items are prepared and handled in accordance with contract specifications to ensure good quality. When requesting these items from a supply activity, you should clearly identify them by National stock number and description.

Seafoods are highly susceptible to spoilage, and receipts from either Navy or commercial sources should be carefully checked for quality. Refrozen seafood should not be accepted; it will usually have soft, flabby flesh, a sour odor, and may show discoloration. There may be an occasion or special occasions when you have to use fresh fish in your menu and you should be able to distinguish the good products from the bad products.

FISH

To save time in the preparation and the cooking, most dining facilities purchase fish in the form in which it will be prepared. Fresh fish may be purchased in a variety of cuts or forms as illustrated and described in Figure 7-15A and 7-15B.

Selecting Fresh Fish

When you are buying fresh fish locally, you should check for quality and freshness. Fresh fish should have:

- Eyes-bright, clear, and full.
- Gills-reddish pink and free from slime.
- Scales adhering tightly to the skin, bright colored with characteristic sheen.
- Flesh-firm and elastic, springing back when pressed, not separating from the bones.
- Odor-fresh, free from objectionable odors.

Fish[1]	Type	Form
Cod	Frozen	Fillets, skinless and breaded fish portions or sticks.
Flounder	Frozen	Fillets, skinless and breaded fish portions or sticks.
Haddock	Frozen	Fillets, skin on or skinless and breaded fish portions or sticks.
Halibut	Frozen	Steaks, skin on.
Mackerel[2]	Frozen	Fillets, skin on or skinless.
Perch	Frozen	Fillets, skin on or skinless and breaded fish portions or sticks.
Rockfish	Frozen	Fillets, skinless.
Salmon	Canned	Pieces.
Salmon[2]	Frozen	Steaks.
Sardines	Canned	Plain (headless).
Tuna	Canned	Chunks or solid pack.
Whiting	Frozen	Fillets, skin on or skinless.
Shellfish		
Clams	Canned	Minced, packed in natural juices.
Clams	Frozen	Shucked.
Crawfish	Frozen	Tail (lobster tail).
Lobster	Fresh	Whole.
Lobster	Frozen	Whole.
Oyster (Eastern and Pacific)	Frozen	Whole.
Scallops, Sea	Frozen	Shucked.
Shrimp	Canned	Whole.
	Dehydrated	Whole.
	Frozen	Breaded, whole, deveined.
		Breaded, molded, deveined.
	Frozen	Whole, peeled.
	Frozen	Whole, unpeeled.

[1] Seasonally and locally available fresh and frozen fish items are also authorized for Navy messes.

[2] Broiling or baking are the most suitable cooking methods for this species of fish—It should not be fried.

Figure 7-14.—Fish and shellfish authorized for Navy Dining Facilities.

Fresh fillets, steaks, and chunks should also have a mild, fresh odor, and the flesh should have a fresh-cut appearance without any traces of browning or drying.

Frozen Fish

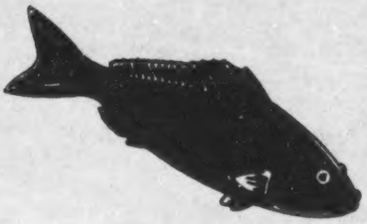
Frozen fish compares favorably in appearance, flavor, and food value with fresh fish and may be used interchangeably. Frozen fish should be delivered still frozen and should remain frozen until just before it is cooked.

SHELLFISH

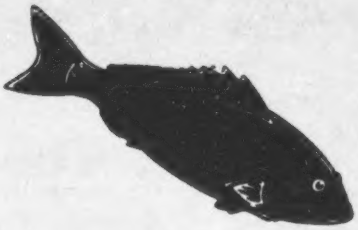
The chief varieties of shellfish available for use in the dining facilities from both the Navy include oysters, clams, scallops, lobsters, and shrimp.

Oysters

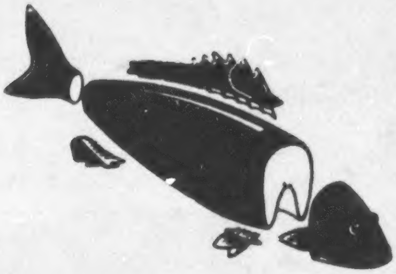
SHUCKED oysters are those that have been removed from the shell. Shucked oysters should be plump, and have a natural creamy color, have



WHOLE OR ROUND fish are those marketed just as they come from the water. Before cooking, they must be scaled and eviscerated (which means removing the entrails). The head, tail, and fins may be removed if desired, and the fish either split or cut into serving-size portions, except in fish intended for baking. Some small fish, like smelt, are frequently cooked with only the entrails removed.



DRAWN fish are marketed with only the entrails removed. In preparation for cooking, they generally are scaled. Head, tail, and fins are removed, if desired, and the fish split or cut into serving-size portions. Small drawn fish, or larger sizes intended for baking, may be cooked in the form purchased after being scaled.



DRESSED fish are scaled and eviscerated, usually with the head, tail, and fins removed. The smaller sizes are ready for cooking as purchased (pan-dressed). The larger sizes of dressed fish may be baked as purchased but frequently are cut into steaks or serving-size portions.

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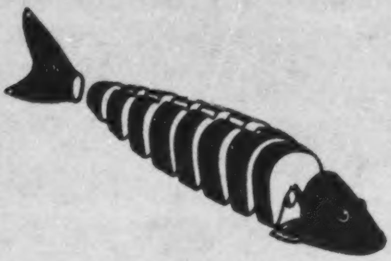
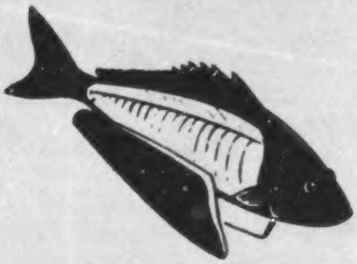
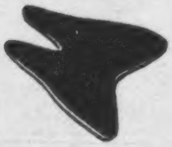
Figure 7-15A.—Market forms of fish.



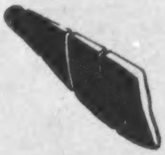
STEAKS are cross section slices of the larger sizes of dressed fish. They are ready to cook as purchased, except for dividing the very largest into serving-size portions. A cross section of the backbone is usually the only bone in the steak.



The sides of the fish, cut lengthwise away from the backbone, are called FILLETS. They are practically boneless and require no preparation for cooking. Sometimes the skin, with the scales removed, is left on the fillets; others are skinned. A fillet cut from one side of a fish is called a single fillet. This is the type of fillet most generally seen in the market.



BUTTERFLY FILLETS are the two sides of the fish corresponding to two single fillets held together by uncut flesh and the skin.



STICKS are pieces of fish cut lengthwise or crosswise from fillets or steaks into portions of uniform width and length.

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Figure 7-15B.—Market forms of fish—Continued.

a clear liquor (natural juicies), and be free from shell particles. Fresh shucked oysters are generally packed in metal containers or waxed cartons. The cartons should be refrigerated or surrounded by ice.

Shucked oysters are also available frozen. Frozen oysters should not be thawed until they are to be used. Once thawed, they should never be refrozen. Frozen breaded oysters may be deep fat fried. Keep frozen until ready to use.

Clams

Shucked clams are available frozen, regular or individual quick frozen (IQF). Frozen clams should not be thawed until they are to be used. Since the IQF clams are frozen separately, they are easier to handle. Only the amount required needs to be removed. The remaining quantity should be returned to the freezer for future use. Once thawed, they should not be refrozen. Canned minced clams are available for use in chowders and soups.

Scallops

Scallops are shellfish, similar to oysters and clams. The excellent flavored adductor muscle, sometimes called the eye, is the only edible part of the scallop.

The Navy procures frozen sea scallops. When thawed, they have a sweetish odor. Frozen breaded scallops are available. These may be deep fat or oven fried.

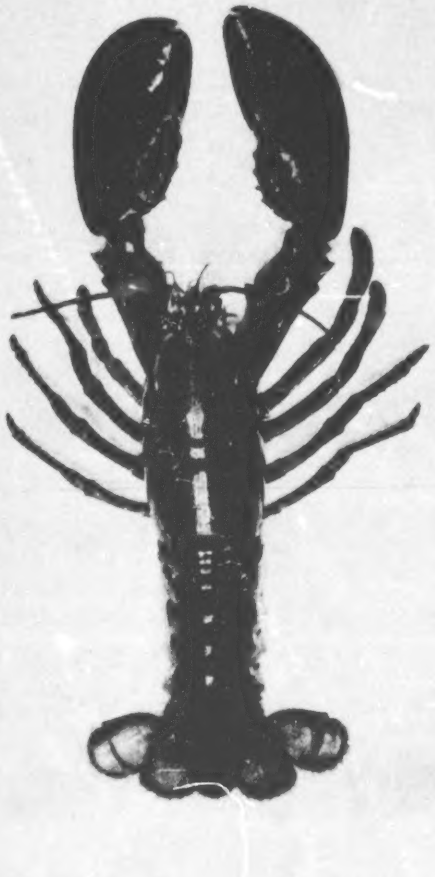

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Figure 7-16.—Northern lobster.

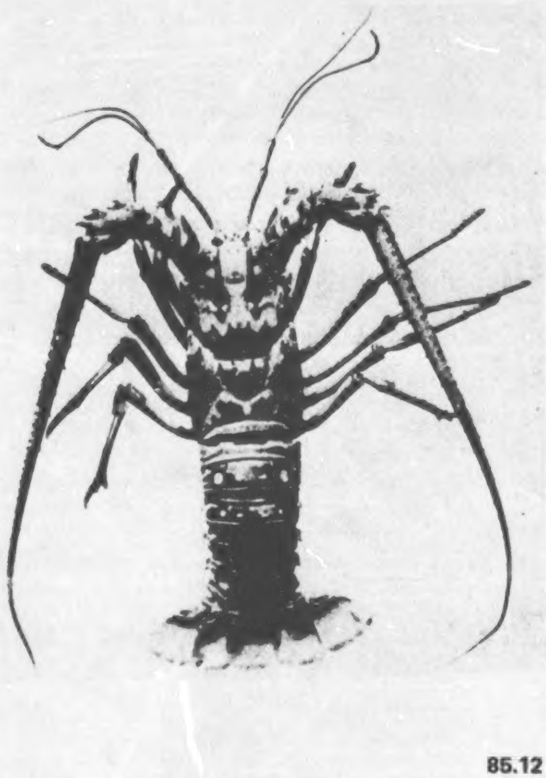

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Figure 7-17.—Spiny lobster or rock lobster.

Lobster

Lobster is one of the largest species of shellfish. There are two types: Northern lobster and Spiny lobster. Northern lobster, the true lobster, is distinguished by its large heavy claws. (Figure 7-16)

Spriny or rock lobster is distinguished by the absence of large claws and by the presence of its long slender antenna and many prominent spines on its body and legs. (Figure 7-17.)

Northern Lobsters are found along the Atlantic coast from Labrador to North Carolina, but the bulk of them are taken along the Maine and Massachusetts coasts, and are most plentiful in the summer. Both fresh and frozen whole lobsters are procured by the Navy.

Fresh lobster must be alive up to the moment it is cooked, and the tail should curl under the body and not hang down when the lobster is picked up. The normal color of live lobster varies from a dark bluish green to a brownish olive. The weight varies from one to three pounds.

Crawfish (lobstertail).–It is sometimes called "langosta" and is nearly worldwide in its distribution, ranging through the tropical, sub-tropical, and temperate waters of the Atlantic, Pacific, and Indian Oceans. In the United States it is found in Florida and southern waters.

The meat of the crawfish comes almost entirely from the tail. The frozen tails of several species weighing from four ounces to more than a pound each, are sold on the market.

Shrimp

Shrimp are caught in all of the coastal waters from Maine to Alaska. Although shrimp vary in color when raw, they differ little in appearance or flavor when cooked. "Green shrimp" is a commercial term used to denote raw shrimp.

Shrimp may be procured raw, whole; raw peeled and deveined, raw breaded, individually quick frozen; and breaded molded shrimp portions.

THAWING FROZEN FISH.–Frozen fish fillets and steaks should be thawed gradually under refrigeration and used as soon as possible thereafter. The ideal temperature range for the thawing period is 36° to 38° F. During the thawing period, the fish should be kept in the box just as it was received from the supplier. The box furnishes insulation, which permits all the fish to thaw uniformly. If the fish is thawed at temperatures which are too high and is not properly protected, the surface may begin to spoil before the inside is completely thawed.

Frozen, breaded seafood products should not be thawed before they are cooked.

- The amount of fish thawed should not exceed the amount to be served.

- Fish should be thawed just before they are used; they should not be refrozen.

- Seafood products should not be thawed under cold running water.

CHAPTER 8

FOOD PREPARATION

This chapter covers some of the what, how, why, and when of food preparation.

There is a short phrase that expresses the vital importance of your job as mess management specialist—people must eat to live. How the crew of your ship will eat depends on you. Remember that the desired end result of all your functions as a MS is for the food to be enjoyed by the patrons you are serving. To achieve this, you must continually strive for perfection in providing palatable, wholesome, and attractive food. You can get a great deal of satisfaction from serving an excellent meal, and your diligence, zeal, and attention to detail in preparing food can do much to keep the morale high and the crew happy.

To ensure efficient day-to-day operations of the dining facility, the senior MS uses management tools which provide guidance for the personnel assigned to the galley. These tools are explained so that you will have a clear understanding of why they are used and how they serve to promote efficiency in the galley.

FOOD PREPARATION WORKSHEET

The Food Preparation Worksheet (NAVSUP Form 1090) is an important part of food preparation. When posted in the galley, it becomes a written directive—a medium for passing information from supervisory personnel to watch captains and other key personnel involved in the preparation of food. Dining facilities having three or more MS personnel are required to use the food-preparation worksheet in accordance with NAVSUP P-486 (Figure 8-1).

Study the Food Preparation Worksheet when you are on watch; it provides pertinent information concerning the preparation of the daily menu. The menu item column is copied directly from the menu draft (NAVSUP Form 1092). Notice that space is provided on the food-preparation worksheet to enter the Armed Forces Recipe Card number, local approved recipe number and the number of portions to be prepared. Space is also provided for the senior MS to enter any additional instructions regarding the preparation and serving of each menu item.

The Food Preparation Worksheet is a valuable record of the menu for the day. Information which is a "must know" for any person supervising a dining facility operation can be posted on it, such as the number of persons actually fed and the acceptability of specific menu items. This information is beneficial when the senior MS prepares future menus and Food Preparation Worksheets. It is recommended that worksheets be retained on file for a minimum period of six months.

ARMED FORCES RECIPE SERVICE

The Armed Forces Recipe Service was developed as a joint effort of all branches of the Armed Forces with the cooperation of the food industry. It consists of approximately 1,100 recipes and variations that have been tested and proven. The recipe service also contains:

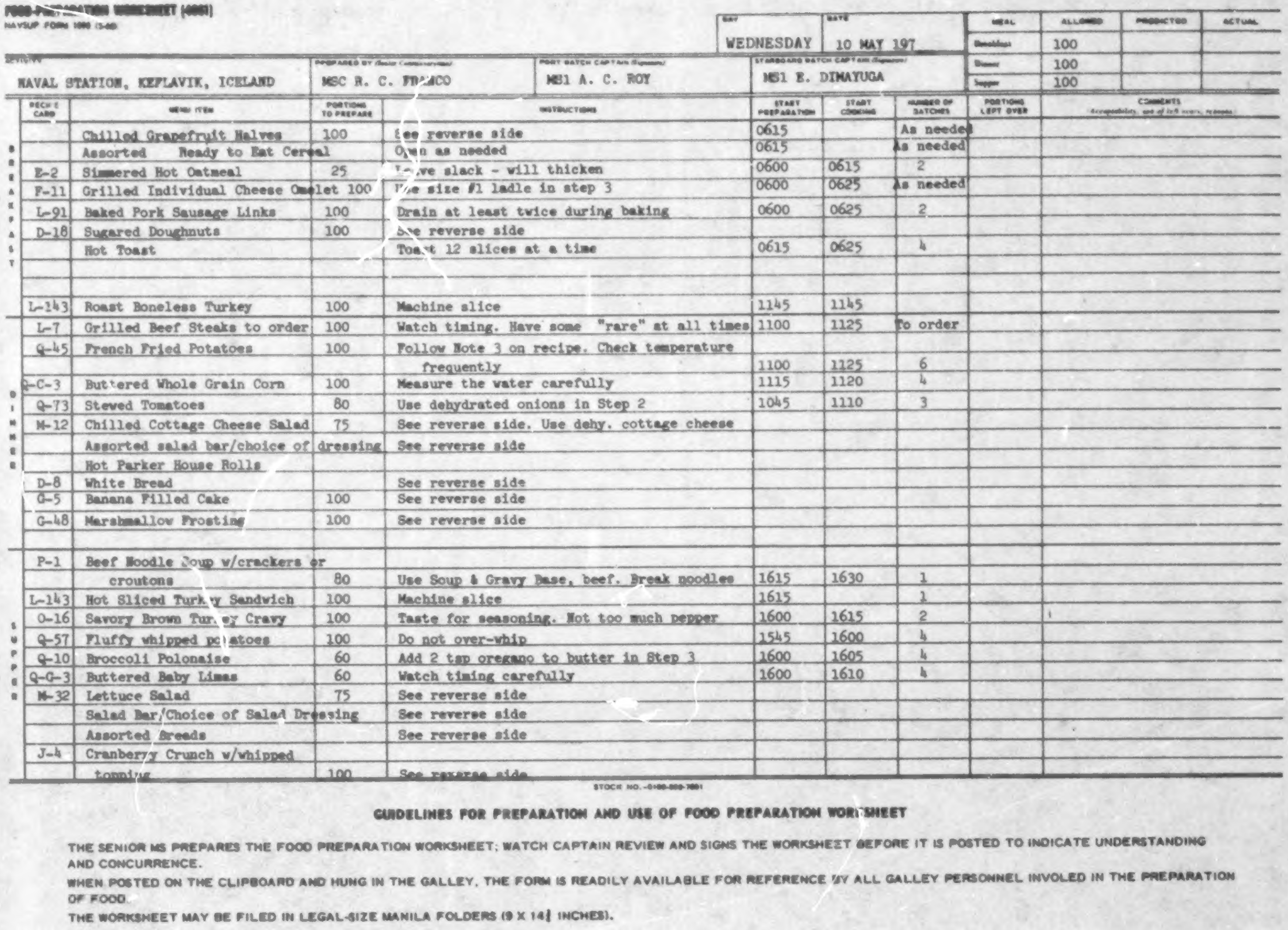
(1) Guidance cards with product usage and preparation information.

(2) Color photographs of finished products and some stages of preparation.

(3) "How-to-do-it" line drawings.

STANDARDIZED RECIPES

All food should be prepared according to the recipes published in the Armed Forces Recipe



FOOD-PREPARATION WORKSHEET (4061)
NAVSUP FORM 1090 (5-60)

ACTIVITY	PREPARED BY (Senior Commissaryman)	PORT WATCH CAPTAIN (Signature)	STARBOARD WATCH CAPTAIN (Signature)
NAVAL STATION, KEFLAVIK, ICELAND	MSC R. C. FRANCO	MS1 A. C. ROY	MS1 E. DIMAYUGA

DAY	DATE
WEDNESDAY	10 MAY 197

MEAL	ALLOWED	PREDICTED	ACTUAL
Breakfast	100		
Dinner	100		
Supper	100		

	RECIPE CARD	MENU ITEM	PORTIONS TO PREPARE	INSTRUCTIONS	START PREPARATION	START COOKING	NUMBER OF BATCHES	PORTIONS LEFT OVER	COMMENTS (Acceptability, use of left overs, reasons)
BREAKFAST		Chilled Grapefruit Halves	100	See reverse side	0615		As needed		
		Assorted Ready to Eat Cereal		Open as needed	0615		As needed		
	E-2	Simmered Hot Oatmeal	25	Leave slack - will thicken	0600	0615	2		
	F-11	Grilled Individual Cheese Omelet	100	Use size #1 ladle in step 3	0600	0625	As needed		
	L-91	Baked Pork Sausage Links	100	Drain at least twice during baking	0600	0625	2		
	D-18	Sugared Doughnuts	100	See reverse side					
		Hot Toast		Toast 12 slices at a time	0615	0625	4		
	L-143	Roast Boneless Turkey	100	Machine slice	1145	1145			
DINNER	L-7	Grilled Beef Steaks to order	100	Watch timing. Have some "rare" at all times	1100	1125	To order		
	Q-45	French Fried Potatoes	100	Follow Note 3 on recipe. Check temperature frequently	1100	1125	6		
	Q-C-3	Buttered Whole Grain Corn	100	Measure the water carefully	1115	1120	4		
	Q-73	Stewed Tomatoes	80	Use dehydrated onions in Step 2	1045	1110	3		
	M-12	Chilled Cottage Cheese Salad	75	See reverse side. Use dehy. cottage cheese					
		Assorted salad bar/choice of dressing		See reverse side					
		Hot Parker House Rolls							
	D-8	White Bread		See reverse side					
	G-5	Banana Filled Cake	100	See reverse side					
	G-48	Marshmallow Frosting	100	See reverse side					
SUPPER	P-1	Beef Noodle Soup w/crackers or croutons	80	Use Soup & Gravy Base, beef. Break noodles	1615	1630	1		
	L-143	Hot Sliced Turkey Sandwich	100	Machine slice	1615		1		
	O-16	Savory Brown Turkey Gravy	100	Taste for seasoning. Not too much pepper	1600	1615	2		
	Q-57	Fluffy whipped potatoes	100	Do not over-whip	1545	1600	4		
	Q-10	Broccoli Polonaise	60	Add 2 tsp oregano to butter in Step 3	1600	1605	4		
	Q-G-3	Buttered Baby Limas	60	Watch timing carefully	1600	1610	4		
	M-32	Lettuce Salad	75	See reverse side					
		Salad Bar/Choice of Salad Dressing		See reverse side					
		Assorted Breads		See reverse side					
	J-4	Cranberry Crunch w/whipped topping	100	See reverse side					

STOCK NO.-0108-000-7001

GUIDELINES FOR PREPARATION AND USE OF FOOD PREPARATION WORKSHEET

THE SENIOR MS PREPARES THE FOOD PREPARATION WORKSHEET; WATCH CAPTAIN REVIEW AND SIGNS THE WORKSHEET BEFORE IT IS POSTED TO INDICATE UNDERSTANDING AND CONCURRENCE.

WHEN POSTED ON THE CLIPBOARD AND HUNG IN THE GALLEY, THE FORM IS READILY AVAILABLE FOR REFERENCE BY ALL GALLEY PERSONNEL INVOLED IN THE PREPARATION OF FOOD.

THE WORKSHEET MAY BE FILED IN LEGAL-SIZE MANILA FOLDERS (9 X 14½ INCHES).

48.46.2

Figure 8-1A.—Food Preparation Worksheet, Front and Guidelines for preparation and use.

RECIPE CARD

Standard Navy-Marine Corps Recipe Card number or locally approved recipe.

MENU ITEM

List the menu items to be prepared indicating any leftover foods that are to be served with the meal. Do not include such items as crackers, assorted breads, jelly, jam, milk, coffee, etc. A pattern for service of these items should be developed at each activity and posted in the galley or serving counter area.

PORTIONS TO PREPARE

The number of portions is determined by the predicted number to be fed or the acceptability of the menu item.

INSTRUCTIONS

Special instructions regarding the preparation and/or service of menu items and the service of leftover food to be served with the meal are to be entered. To say "follow the recipe card" is not necessary; the recipe card number in the first column indicates that the recipe will be followed. An example of an instruction would be "use dehydrated onions in Step 3" or "slice meat loaf on the line."

START PREPARATION

Quality food preparation requires time and attention to detail. Menu items to be prepared, sanitary precautions, and the number of men to do the work, determine the time for precooking preparation.

START COOKING

The length of time required to cook a menu item (first batch), and the scheduled meal hour, determine the time actual cooking should begin. It should be timed so that the menu item can be transferred to the serving counter for immediate service.

NUMBER OF BATCHES

Every effort should be made to practice small-batch or progressive cookery. The number of batches, and quantity per batch, is determined by the total number of portions to prepare, the length of the serving hour, and peak periods.

48.46.4

Figure 8-1B.—Food Preparation Worksheet, Front and Guidelines for preparation and use—Continued.

GUIDELINES FOR PREPARATION AND USE OF FOOD PREPARATION WORKSHEET–Continued

VEGETABLE PREPARATION

The vegetable, quantity, method of preparation (diced, sliced, etc.), and the hour the preparation should be accomplished should be entered. Any additional quantities used should also be entered by the petty officer in charge of the vegetable preparation room. At the end of the day, he should sign to indicate all has been accomplished per instructions.

BAKE SHOP

The number of portions of any dessert item and hot breads should be entered. Note any special instructions for time, portion size, garnish, cutting and serving. Any additional items issued to serving line or for use in bake shop should be entered, and any leftover dessert items returned after a meal serving hour. At the end of the day the baker should sign to indicate that all has been accomplished per instructions.

MEAT ROOM

List the meat items, quantity, and any specific instructions for the MS assigned to the meat room or for the watch captain. Weekly menu should be reviewed when this section is being completed so that frozen meat items scheduled for meals 2 or 3 days in the future, can be removed from the freeze space to chill space to allow for proper thawing. Quantities of meat items needed during a serving period, in addition to those listed, should be noted. Responsible MS or watch captain should sign at the end of each day's work.

AFTER THE MEAL HAS BEEN SERVED

Watch captain:

1. Posts the number of persons actually fed (obtain this information from the dining facility MAA).
2. Completes the "Portions Leftover" column.

SENIOR MS AND/OR WATCH CAPTAIN

Completes the "Comments" column indicating the acceptability of new items and the course of action to be taken in regard to leftover food, noting reason for portions short, or for preparation in excess; acceptability of menu items.

48.46.4

Figure 8-1C.—Food Preparation Worksheet, Front and Guidelines for preparation and use—Continued.

Service or recipes which have been approved by the food service officer.

The use of standardized recipes ensures high quality in food preparation; it eliminates guesswork and prevents variations in quality and quantity. The use of exact amounts of the various ingredients produces accurate yields, prevents leftovers and promotes food cost control. The food items needed for the day's menu are requisitioned from the bulk issueroom storekeeper by the watch captain.

Recipes in the Armed Forces Recipe Service are printed on 5" by 8" colored cards. Each recipe is calculated to yield 100 portions. The size of the individual portion appears in the upper right corner. The ingredients are designated in both weights and measures. The measure specified for each ingredient is comparable to its weight. More accurate results can be expected when the dry ingredients are weighed rather than measured.

The amounts (measures) of ingredients are designated in teaspoons, tablespoons, cups, pints, quarts, and gallons. Listed below are the abbreviations used on the recipe cards; equivalents of weights and measures; and sizes of scoops or dippers:

Abbreviations Used on Recipe Cards

A.P. = as purchased
E.P. = edible portion
t = teaspoon
T = tablespoon
C = cup
pt = pint
qt = quart
gal = gallon
oz = ounce
lb = pound

Equivalents of Weights and Measures

3 teaspoons = 1 tablespoon
16 tablespoons = 1 cup
1 cup = 1/2 pint
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon
16 ounces = 1 pound
32 fluid ounces = 1 fluid quart

Sizes of Scoops or Dippers

No. Per Quart	Measure	Approximate Weight
30	1/8 cup (2 tbsp)	1 ounce
16	1/4 cup (4 tbsp)	2 ounces
12	1/3 cup (5 tbsp)	2 1/2 ounces
10	2/5 cup (6 2/3 tbsp)	3 1/2 to 4 ounces
8	1/2 cup (8 tbsp)	4 ounces

STEPS IN USING STANDARDIZED RECIPES

There are five steps which you must follow when you are using standardized recipes, if an acceptable, uniform end-product is to be prepared. These steps are as follows:

1. Know the number of servings you are to prepare. Refer to the Food Preparation Worksheet for this information.

2. Read the recipe all the way through. Determine what ingredients are needed, the quantity of each ingredient required, and the method you are to follow in the preparation.

3. Adjust the recipe, which will yield 100 servings, to the number of servings you are to prepare. Let us assume that the Food Preparation Worksheet calls for 348 servings.

You will need a working factor—and this factor is obtained by dividing the number of servings needed by 100. In this instance, 348 divided by 100 equals a 3.48 working factor. The quantity of each ingredient in the recipe is multiplied by the working factor.

If, for example, you are going to adjust the recipe for meat loaf L-35 (Figure 8-2) to yield 348 servings, the quantity of bread, onion, and green pepper listed would be changed as follows:

a. The weight of each ingredient as listed on the recipe is multiplied by the working factor.

MEAT LOAF L. MEAT, FISH AND POULTRY No. 35(2)

YIELD: 100 Portions (8 Loaves) **EACH PORTIONS:** 1 Slice

PAN SIZE: 18 by 26-inch Sheet Pan **TEMPERATURE:** 325° F. Oven

INGREDIENTS	WEIGHTS	MEASURES		METHOD
Bread, dry, broken	4 lb.	2 gal.		1. Moisten bread with water; press out and discard excess water. Whip bread until large pieces are unidentifiable. Set aside for use in Step 3.
Water		variable		
Onions, dry, finely chopped	1 lb 4 oz.	1 qt.		2. Sauté vegetables in shortening until lightly browned.
Peppers, sweet, fresh, finely chopped	8 oz.	1 cup		
Celery, fresh, finely chopped	1 lb.	3 cups		
Shortening, melted	8 oz.	1 cup		

(OVER)

INGREDIENTS	WEIGHTS	MEASURES		METHOD
Beef, boneless, ground	30 lb.			3. Combine moistened bread, sautéed vegetables, beef, eggs, and seasonings. Mix lightly but thoroughly. Avoid overmixing if using mixer.
Eggs, whole, beaten	1 lb 4 oz.	2½ cups (12 eggs)		4. Shape into 5 lb loaves; place 4 loaves, crosswise, on each pan.
Salt	6 oz.	9 tbsp		5. Bake about 1 hour. Remove excess fat and liquid during cooking period.
Pepper, black		2 tbsp		6. Cool slightly. Cut 13 slices per loaf.

NOTE: 1. 45 lb beef, carcass, chilled A.P. will yield 30 lb beef, boneless.
2. 2½ oz dehydrated onions and 1⅓ oz dehydrated green peppers may be used in Step 2 Reconstitute according to instructions on Recipe Card A-11. Drain before using.

VARIATIONS

1. VEAL LOAF: In Step 3, use 20 lb ground veal and 10 lb ground beef.
2. PORK LOAF: In Step 3, use 15 lb ground lean pork and 15 lb ground beef.

48.47.1

Figure 8-2.—Recipe for Meat Loaf.

Example of finding a working factor:

3.48
100 ⟌348.00 Note decimal point
300
480
400
800
800

Bread, dry

4 lb
x 3.48
13.92 lb

Green Peppers

.50 lb
x 3.48
1.7400 lb

Onions

1.25 lb
x 3.48
1000
500
375
4.3500 lb

b. The part of a pound, as the .92 pound of bread, dry; .35 pound of onions; or .74 pound of green peppers, is converted to ounces by multiplying 16 by the decimal.

16
.92 lb bread
32
144
14.72 ounces

16 ounces
.35 lb onions
80
48
5.60 ounces

16 ounces
.74 lb green peppers
64
112
11.84 ounces

c. After the part of a pound has been converted to ounces, use the following scale to ROUND them off.

.01 to .12 = 0.
.13 to .37 = 0.25 or 1/4 ounce
.38 to .62 = 0.50 or 1/2 ounce
.63 to .87 = 0.75 or 3/4 ounce
.88 to .99 = 0.99 or 1 ounce

According to the scale, 14.72 ounces of bread will be rounded to 14 3/4 ounces
5.60 ounces of onions will be rounded to 5 1/2 ounces
11.84 ounces of green peppers will be rounded to 11 3/4 ounces.

Going back to the original calculation: 13.92 pounds of bread, dry, will be 13 pounds 14 3/4 ounces; 4.35 pounds of onions will be 4 pounds 5 1/2 ounces; and 1.74 pounds of green peppers will be 1 pound 11 3/4 ounces.

If you decide to use the volume measures which are listed on each recipe, instead of the weights, the same procedure is used; 1 quart of onions times 3.48 equals 13.05 cups. The part of the cup must be changed to teaspoons or tablespoons, so you multiply 16 tbsp per cup times .05 and you get .80 or 2 1/2 teaspoons.

On occasions you may have to adjust the recipe on the basis of the amount of ingredients available rather than for the number of servings. When you increase the quantity of each ingredient in the recipe to yield 348 servings, you will need 104.40 pounds (30 pounds time 3.48) of beef. But you have been issued 99 pounds and are instructed ro use that amount of meat. Knowing that the proportion of all ingredients in the recipe must be in balance to ensure an acceptable end-product, you again calculate a working factor. This is done by dividing the pounds you have to use by the pounds required to yield 100 servings.

For example, 99 pounds divided by 30 (pounds per 100 servings) equals a 3.30 working factor. The quantity of each item in the recipe will be multiplied by 3.30.

4. Before you start to prepare the recipe, assemble all of the necessary ingredients, the measures or scale, the mixing spoons or beaters, and the right size and number of pans you will need.

5. Position the recipe in such a way that you can follow each step on the recipe card as

you work. Then carefully and accurately perform each step. Remember, there are no shortcuts.

SANITARY ASPECTS OF FOOD PREPARATION

Every precaution should be taken in the handling of food to prevent contamination. The following paragraphs discuss the procedures that should be followed when in the preparation and handling of food.

SAFE HOLDING TEMPERATURES FOR COOKED FOODS

Protein foods which are not served immediately after they are cooked should either be chilled to temperatures of 40°F or lower (but not frozen) or held at 140°F or higher. Protein foods include meats, fish, poultry, gravies, meat stocks, soups, eggs, custards, cream fillings, and milk.

Cooked protein foods which have been held at temperatures between 40°F and 140°F for more than 3 hours should be considered unsafe for consumption and destroyed. The exception to this rule is reconstituted dehydrated eggs. Once reconstituted they are considered unsafe if held out of the refrigeration for more than one hour. If refrigerated immediately after reconstitution they can be held safely up to 12 hours. In no case should they ever be held over 12 hours. If foods are refrigerated at intervals and then permitted to warm up, the total time of the various periods between 40°F and 140°F should not exceed 3 hours. Protein foods that are composed of ingredients which are hand-peeled, hand-sliced, or hand-diced after they are cooked should never be used as leftovers; the 3-hour limit between temperatures of 40°F and 140°F is usually taken in preparing, chilling, and serving the food. Hand preparation not only increases the chance of contamination, but generally increases the length of time that these foods are held at room temperatures.

You should not return opened jars or bowls of mayonnaise and cooked salad dressings from salad bars to refrigerators for reuse at a later meal because of the danger of miscalculation of total lapsed time that these salad dressings have been held at temperatures between 40°F and 140°F. Instead, mayonnaise and cooked salad dressings should be placed on the salad bar in small quantities, and must not be returned from the salad bar for reuse. If economically feasible, individual packets/servings of items such as: catsup, mustard, mayonnaise, and so forth, should be used on the salad bar. This will prevent waste and will be more sanitary.

CARE OF LEFTOVERS

When leftovers or warm foods are chilled, care should be taken to ensure prompt and thorough chilling (40°F or below) to the center of the food mass. Foods that are to be refrigerated should be placed in shallow pans to a depth of not more than 3 inches and should be covered with lids or waxed paper. A card should be attached to the pan indicating the meal, the time and the date it was served. This will serve as a guide as to the time the leftover can be held for later use. Such foods should not be put in large deep pans, as it may take too long to chill the food to the center of the food mass that sufficient time will elapse for the growth of harmful bacteria and the development of toxin. Guard against any other procedures which may delay the cooling of the food. Place food to be chilled in the refrigerator immediately. Do not save leftovers for more than 36 hours. Careful planning will enable you to utilize leftovers in your menu while they are still safe and usable. Freezing leftovers is prohibited.

GROUND FOOD

Food which has been ground or chopped should be refrigerated immediately if it is going to be cooked later or incorporated in a prepared-dish. Such ground or chopped food should be refrigerated in shallow pans filled to a depth of not more than 3 inches. Cover the food until it is to be cooked.

MEATS

Meats which are cut, sliced, or diced should be placed in shallow containers, covered with lids or waxed paper, and refrigerated immediately. The temperature of the meat cutting room should be maintained at 50°F.

RECONSTITUTED DEHYDRATED FOODS

Dehydrated foods are just as susceptible to spoilage after they are reconstituted as the fresh items. After dehydrated foods have been reconstituted, they should not be allowed to remain at room temperature more than 3 hours (1 hour for eggs) from the time the water is added.

THAWING METHODS FOR FROZEN MEATS

Frozen meat may be thawed in several ways. The preferred method is slow thawing because there is less drip loss in the meat. Meat thawed slowly yields a juicier and more palatable cooked product. On small ships with limited chill space, or whenever time is limited between meat issue and meal time, the slow thawing is not practicable. An alternate method is recommended for such circumstances.

Once meat has been defrosted or thawed, it should be used as soon as possible, and not refrozen. Breakouts should not exceed the amount to be served.

Preferred Thawing Method

Break out the quantity of meat required. Remove it from the shipping container, but leave the meat inside the wrappings. Thaw slowly at temperatures between 36° and 38°F until almost completely thawed. The thawing period will vary according to:

1. Size of the meat cut. The larger the size, the longer the time required.
2. Bone-in or boneless state. Bone-in meat takes less time to thaw.
3. Air temperature and circulation in chill space. Moving air accelerates thawing.
4. Quantity of meat being thawed in a given area. A large amount will lower the temperature of the room and decrease the thawing action. Spread the cuts out. Do not stack them. It is almost impossible to predict the exact time required to thaw meat unless there is a perfectly controlled set of circumstances. Frozen wholesale beef cuts and frozen boneless beef may require up to 48 hours to thaw at temperatures of 36°–38°F. Cuts from pork, veal, and lamb would probably thaw in about 24 hours under refrigerator temperatures.

Alternate Thawing Method

If it should become necessary to thaw the frozen meat quickly, it should be allowed to thaw in the original unopened container at room temperature (72°F) for several hours. If the meat is not completely thawed after this time, open the box so that it will thaw more rapidly. The container acts as a refrigerator, allows the meat to thaw from the outside toward the center of the package. The outside thawed pieces remain sufficiently cold to prevent spoilage while the center is thawing.

FISH

Like meat and poultry, fish is an excellent protein food. Fish steaks and fillets as well as breaded fish portions and sticks are served in the Navy dining facilities. Steaks are slices cut crosswise from large fish; fillets are lengthwise pieces taken from fish and free from bone. Fish is delicate in structure as well as in flavor and the flesh is tender and moist. Handle fish carefully.

The Navy also procures shellfish such as frozen shucked clams, frozen scallops, frozen shucked oysters, and frozen shrimp, to name a few. Recipes for preparing fish and shellfish are included in the L(fish) section of the recipe service.

THAWING FROZEN FISH

Fish steaks and fillets may be cooked either in the frozen or the thawed states. Partial thawing may be necessary to separate frozen fillets or steaks. If coatings or breadings are to be applied to fillets for frying, or if fish is to be stuffed and baked, it should be thawed completely. Thaw at 36° to 38°F in unopened packages. Never thaw frozen fish by exposure to heat. Frozen breaded shrimp, or molded breaded shrimp, must be cooked in the frozen state. Raw peeled shrimp that are to be breaded and fried should be thawed before they are breaded. Peeled and deveined shrimp should be partially thawed to prevent over-cooking. Oysters should be thawed completely just prior to cooking.

COOKING FISH

Fish must be cooked thoroughly but not over-cooked. Seafood prepared too far in advance, even though properly cooked, becomes dry, hard, and loses its flavor and succulence. Fish should be baked at a moderate temperature (375°F). It is done when it flakes easily with a fork. Cooking it too long makes it dry and tough.

Use of Fat

Some fat or oil should be added to practically all varieties of fish, whether light-flesh or dark-flesh, when they are cooked. The fat helps keep the fish moist while it is cooking, and makes it more palatable. If the fish is baked, a solid fat such as butter or shortening may be "dotted" over the fish; melted fat or oil may be brushed on the fish; sliced bacon or thinly sliced salt pork may be laid over the fish. If the fish is to be deep-fat fried some fat is added to the fish through the frying process. Fat may also be added to the fish by a sauce made with fat or oil.

Since there are no tough cuts of fish, it should be cooked in a large amount of water only when a soup, or chowder-type dish is prepared. Usually, the water or stock is seasoned or flavored and is used in the finished food.

Seasoning

Simple seasoning is best for most fish. Salt and pepper should be added in moderation; monosodium glutamate also enhances the flavor. Lemon juice and the milder herbs such as parsley are good seasonings. Seasonings may be added to the fish or placed around it in a baking pan, or they may be incorporated into a sauce or a basting liquid that creates steam and helps to keep fish moist and flavorsome. When fish is cooked in a liquid or a sauce, both the fish and the sauce should be lightly seasoned to avoid a salty product.

SOUPS

Soup is a tasty, popular food. It is nutritious, wholesome, and stimulates the appetite. Soup should be served at least once a day in cold weather, if practicable, and at least every few days regardless of the weather.

TYPES OF SOUPS

Soups are basically of three types: light, heavy, and cream soups. The light soup is thin and clear, and is usually served with a heavy meal. The heavy soups are those that are thickened with cereals such as barley, rice, or macaroni; and the purees which are made from cooked peas, beans, or cooked fresh vegetables which are put through a sieve and then added to a seasoned stock. A heavy soup is usually served with a light meal. The cream soups are those which are made from either a stock base, to which hot milk is added, or from a thin white sauce. Chowders are a special category of heavy soups.

The P (soups) section of the ARMED FORCES RECIPE SERVICE contains recipes for various kinds of meat and chicken stock. The standard stock items, instant beef, chicken or ham soup and gravy base, may be reconstituted for use in any soup recipe. These powdered bases are seasoned and when they are reconstituted in boiling water they have the characteristic flavor of beef, ham, or chicken broth. The proportions that should be used to reconstitute these bases are included in the A (miscellaneous) section of the recipe service.

Soup stock spoils easily—HANDLE IT CAREFULLY. It should be placed in a clean container and stored in the refrigerator until it is used.

VEGETABLES FOR SOUP

The vegetables most commonly used for soups are celery, carrots, beans, peas, green peppers, onions, and tomatoes. Vegetables are cut into small cubes, or into match-like strips which are called julienne. Vegetables to be used in soups should be cooked according to the instructions given in Armed Forces Recipes for soup.

The dehydrated vegetables such as parsley, onions, green peppers, and potatoes may be used in soups. It is not necessary to reconstitute them first; they may be added directly to the product being prepared.

DEHYDRATED SOUPS

The canned dehydrated soups and condensed soups are not only easy to prepare but they are timesavers and spacesavers.

Dehydrated soups such as chicken-noodle, green pea, and tomato-vegetable are prepared by adding the required amount of the dehydrated soup to the specified amount of boiling water. The mixture is covered and allowed to simmer for the length of time specified on the container. The product closely approximates, in appearance and flavor, the same type of soup made from raw food items.

The canned condensed soups are reconstituted by using an equal volume of cold water, which is stirred in slowly. A wire whip is a good utensil to use for stirring this mixture. The soup is brought to a boil and is then ready to serve. Condensed soups have the same characteristic body, aroma, flavor, color, and consistency as soups made from fresh ingredients.

SEASONING SOUPS

The individual recipe in the soup section specifies the types and amounts of seasonings that should be used. When meat or chicken stock is made, the flavor from the ingredients used is very concentrated; therefore, it is essential to use accurate amounts of the ingredients. Just before the soup is to be served, check it again for proper seasoning. It is better to add more seasoning to the stock or soup a short time before it is served, rather than have a soup so highly seasoned it is unpalatable. If the taste check indicates that the soup is too salty, add sliced raw potatoes to the soup, bring the soup to a simmer for a few minutes, then remove the potatoes.

GRAVIES AND SAUCES

Any gravy or sauce served as an accompaniment to a food is intended to complement or enhance that particular food. It should not stand apart with no relationship to the food, nor should it mask the food. It is important to consider the suitability of a gravy or sauce to its particular purpose.

The 0 (sauce) section of the recipe service contains many recipes for gravies to be served with meats and poultry, sauces to be served with fish and vegetables, and sweet sauces to be served with desserts.

ROUX

Recipes for gravies and sauces often include a statement about making or using a "roux." Roux is the melted fat and starch base that is used mainly for thickening sauces, gravies, and soups. The key step in making a successful gravy or sauce is to cook the roux over extremely low heat. An important thing to remember is that flour alone must never be put into hot liquids for it will promptly form into hard lumps that cannot be cooked or stirred smooth. A roux may be prepared by two methods: the cold roux method or the warm roux method. Cold roux is prepared by combining flour with liquid fat, then stirring until a smooth paste is formed. In the warm roux method, the fat is first melted over low heat and then the flour is added.

Milk is used as the liquid for cream or white sauce. The roux, in either sauce, must be thoroughly cooked so that no taste of starch remains. When starch is cooked in liquid, the granules burst and take up moisture. The starch must be cooked long enough to burst all the starch granules or the taste of raw starch remains and the gravy or sauce will not be thick enough.

SWEET SAUCES

Sweet sauces or dessert sauces give a delightful finishing touch to dessert dishes. A wide variety of desserts is possible by combining the various sauces with puddings, cake, fruit, and ice cream. Many dessert sauces are named for the chief flavoring ingredient, such as butterscotch, lemon, nutmeg, orange, and vanilla sauces. These sauces are made principally from pregelatinized starch or corn starch, sugar, water, butter, salt, and the flavoring agent. Occasionally, milk and eggs are used in the preparation.

VEGETABLES

Vegetables of all types are nutritional necessities in a well-balanced diet. In addition to the contribution of important minerals and vitamins, vegetables add color, flavor, and interest to meals. All too frequently, vegetables are rejected or left uneaten when they are poorly cooked; consequently, they are not pleasing in appearance or flavor. A vegetable can become unpopular simply from being overcooked, watery or poorly seasoned. Furthermore, the food value may be lost or diminished by improper handling and cooking.

VEGETABLES PROCURED FOR NAVY DINING FACILITIES

Vegetables are bought by the Navy in the following forms: canned, dehydrated, frozen, fresh, and dried.

Canned Vegetables

Vegetables that are canned have been cooked in the container and need only to be brought to the boiling temperature just before they are served. Never boil a canned vegetable; always avoid overheating or overcooking. The liquid from canned vegetables should be saved and used in soups, sauces, or gravies. Follow the Armed Forces Recipe Service guidelines for heating canned vegetables.

Dehydrated Vegetables

Dehydrated vegetables are now widely used and popular in Navy dining facilities. Their small weight and volume make them convenient to store. They are easy to prepare; all the precooking tasks associated with raw vegetables have been done for you. They are peeled, diced, sliced, or chopped, and ready to use. They eliminate waste and ensure portion-control.

The aim in dehydrating is to remove most of the water from the food--sometimes 99 percent of it—without damaging the product. In packaging, desiccation sometimes is used to remove the remaining amount of water from dehydrated foods. A small envelope containing a chemical (activated lime) is put into the final package. It absorbs water from the food during storage. Be sure to discard the dessicant bag.

Precooked potato granules, sliced raw potatoes, raw cabbage, chopped onions, and green peppers are some of the dehydrated vegetables used by the Navy. They are reconstituted by adding a measured quantity of the vegetable to a measured volume of water. The temperature of the water will vary (lukewarm or cool) with the specific dehydrated vegetable being reconstituted as will the length of time required for the reconstituting process (15 to 30 minutes). Recipes in the Q (vegetable) section of the recipe service give more detailed instructions for reconstituting dehydrated vegetables.

Frozen Vegetables

Frozen vegetables have the appearance and very nearly the flavor of fresh vegetables. Like the dehydrated vegetables discussed previously, they are easy to prepare; the precooking tasks have been done. Frozen vegetables have been cleaned and trimmed and are ready to use.

In order to preserve the quality, palatability, and acceptability of frozen vegetables they must be handled carefully. They must be kept at 0°F until they are to be used. Partial thawing of frozen vegetables before they are cooked is not necessary, except for those listed in Q-G-3 of the Armed Forces Recipe Service, as this lowers the quality, and once partially or fully thawed, they must be used immediately and should not be refrozen. Section (Q-G-3) of the recipe service prescribes the methods and times for cooking frozen vegetables. Some frozen vegetables may be added directly to boiling water in their frozen state; others should be partially thawed. When the guidance card specifies that a vegetable, spinach for example, should be partially thawed prior to cooking, the frozen spinach should be removed from the freezer and placed in the chill box in its original container until partial thawing has been accomplished.

Dried Vegetables

A variety of dried vegetables are used in the Navy dining facilities. Dried beans and peas are used in soups and entrees (supplemented with meats such as ham, bacon, or ground beef as in chili con carne). Dried garlic is used as seasoning. Dry onions are used extensively in salads and cooking.

PREPARING FRESH VEGETABLES FOR COOKING

Most raw fresh vegetables have waste or portions which are not edible. When you peel, scrape, brush, trim or cut these vegetables, it is important not to destroy or damage edible portions and, especially, not to lose the valuable nutritional elements which are usually contained close to the outer skin or peel. Select vegetables about equal in size, or cut them into pieces of equal size. Then all the pieces will be cooked uniformly in the same length of time. Plan for cooking vegetables with the peel on whenever possible, especially potatoes. If potatoes must be peeled, do it very carefully so as to make thin peelings. Much of the food value in a potato lies close to the skin.

Washing

WASH ALL FRESH VEGETABLES THOROUGHLY. Use a brush to clean celery, carrots, beets, potatoes, turnips, parsnips or any vegetable that is pulled or dug from the soil. Tightly-grown blossoms, heads, or stem-type vegetables, such as asparagus, broccoli, cabbage, cauliflower, and brussels sprouts, will harbor worms and insects which may not be dislodged by casual washing. Soak vegetables of this type in cold salt water (1 tablespoon salt to 1 quart of water) for 1/2 to 1 hour and then rinse thoroughly. Turn cauliflower blossoms end down in the soaking water; cut cabbages in halves or quarters and remove the cores.

Wash the leaf-type vegetables such as spinach, collards, kale, and turnip greens in several changes of cold water to remove dirt and sand particles. Lift these vegetables from the water instead of draining the water off. The dirt and grit will remain in the washing pan or sink. If this water is drained or poured off, the dirt will remain on the vegetables.

Retaining or Restoring Freshness

After vegetables have been washed clean, keep them in a cool storage place until they are to be prepared.

Wilted vegetables can be refreshened by placing them in ice-cold water to which 1/2 cup of vinegar per gallon of water has been added. When they are freshened, the vegetables should be covered with a clean, damp cloth and placed in a cool storage room until you are ready to use them.

Keep the time between preparation and cooking as short as possible. Valuable vitamins are lost when vegetables are soaked too long or are allowed to remain at warm temperatures for several hours.

COOKING VEGETABLES

Vegetables may be baked or sauteed; they may be simmered or steamed; they may be served with butter or covered with an appropriate sauce; or, after they are simmered or steamed, they may be creamed, mashed, or sauteed.

The basic methods of cooking vegetables are baking, steaming, and simmering.

Baking

Cook the vegetables in dry heat in an oven with the addition of little or no water. Dry baking is usually limited to potatoes and squash.

Steaming

Place the vegetables in a perforated food insert and cook in the steamer. The only water that comes in contact with the vegetables is the small quantity formed by condensation.

Simmering

Add the vegetables to boiling water and bring the cooking water back to the boiling temperature as soon as possible; reduce to simmering temperature until vegetables are done.

Short Cooking Time Is Best

Cook only a small quantity of vegetables at a time. Vegetables must be cooked in the shortest time possible, and in a small amount of water. NEVER USE BAKING SODA to preserve color. Overcooking, cooking in too much water, or using soda in the water, destroys the nutrients you are trying to conserve.

In fact, undercook rather than overcook vegetables. This is especially applicable when you know the cooked vegetable is to be placed on the steam table or is to have a second heating or cooking period, such as creaming, scalloping or baking.

To determine if the vegetable is done, press pieces of the vegetable between the thumb and forefinger and taste the sample. If it is done, the vegetable should be tender but have a definite bite quality.

Seasoning and Garnishing

Ways to make vegetables more delicious:

- Cook them in soup stock (clean and free from fat).

- Cook ham or pork bones with the vegetables (do not use much of the pork fat).

- Serve them with a garnish that has a contrasting flavor, such as minced onion, diced crisp bacon, chopped parsley, a cheese sauce, chopped egg sauce, or fresh lemon.

FRUIT

Fruit is procured by the Navy in the fresh, frozen, canned, dehydrated, and dried states. Fresh and processed fruits may be combined to vary the flavor and texture.

Every daily menu should include some fruit. It adds color, variety, food value, and a refreshing flavor to any meal. Fruit is among the least expensive and the most nutritious of all foods and has the distinction of being the most versatile. At breakfast fruit can be served alone or in combination with cereal. It can be prepared as appetizers, salads, main dishes, relishes, desserts, or snacks. It is excellent as a garnish and sometimes acts as seasoning. Fruit is an active partner in many meat dishes. Baked ham and pineapple are often teamed together, as are pork and applesauce, or turkey and cranberry sauce.

PREPARING FRESH FRUITS

Before fresh fruits are used, wash them thoroughly to remove any insect spray which may be present. If possible, pare fresh fruits immediately before they are used. When pared and left exposed to the air, some fresh fruits become discolored. Discoloration may be prevented by covering the fruit with lemon juice, or by dipping the fruit in a chemical solution of antioxidant and water. Follow the directions printed on the antioxidant containers.

APPLES may be served raw and whole for breakfast; sliced and cubed in salads or fruit cocktails; and baked, stewed, or cooked as applesauce for breakfast or dessert. Applesauce or baked apples may be used with pork roast and chops. If the skin of a raw apple is tender, leave it on.

BANANAS may be served whole for breakfast; or sliced for breakfast, desserts, salads, or fruit cocktails. Peel and slice bananas as close to serving time as possible or use an antioxidant solution to prevent discoloration.

BERRIES should be washed and drained. Handle them carefully to avoid crushing them. Serve them raw for breakfast or dessert; raw or cooked over shortcake; and cooked in cobblers or pies.

DATES should be washed and seeded. Serve them on cereals or in cakes, cookies, or puddings.

GRAPES should be washed. Serve them raw in bunches. If they are firm, slice, seed, and serve them in salads or fruit cocktails.

GRAPEFRUIT may be served raw for breakfast or dessert and baked at a low temperature with sugar (either white or brown) for dessert. Cut them into halves crosswise and cut around the rind with a knife to loosen the pulp from each section. For salads, pare and remove each section of pulp by cutting carefully between the membranes, which are very bitter.

LEMONS may be cut into halves and the juice squeezed for use in fruit drinks, pies, or puddings. They may be used on fish or in tea by slicing or cutting them lengthwise into eighths.

MELONS should be cut into halves or quarters and the seeds removed. They may then be served for breakfast or as desserts. They may be used for salads or fruit cocktails by removing the pulp with a ball shaped spoon.

ORANGES may be served whole, cut into halves, or pared, sliced, and segmented for breakfast, desserts, salads, or fruit cocktails. Also they may be cut into halves and the juice squeezed for use in fruit drinks or desserts.

PEACHES may be served raw; whole, or peeled, stoned, or sliced for breakfast or dessert. They may be used in shortcake. When you peel and slice peaches, do it as near as possible to the time you plan to use them or use an antioxidant solution to prevent discoloration.

PEARS may be served raw; whole, pared, cored, sectioned or sliced for breakfast or dessert. They may be stewed with sugar, cinnamon, cloves, or lemon. Use antioxidant solution to prevent discoloration.

PINEAPPLE may be served for breakfast, desserts, salads, or fruit cocktail. Pare pineapple with a long, sharp knife, beginning at the top and cutting down. Fresh raw pineapple should not be added to gelatin-type desserts because pineapple contains an enzyme which retards jelling.

PLUMS may be served raw for breakfast or desserts.

PREPARING FROZEN FRUIT

The Navy procures frozen fruits such as berries–(strawberries, boysenberries), cherries, and peaches. Frozen fruits are closest to the fresh counterpart in flavor and appearance. They may be thawed by placing the unopened container in the chill space 24 hours before it is to be used. This allows the frozen fruit to thaw completely and more evenly throughout.

PREPARING DEHYDRATED FRUITS

Dehydrated fruits, such as instant applesauce, apple slices, and diced apricots, are readily reconstituted by adding a proportionate volume of water to a specified weight of the particular dehydrated fruit. Like the dehydrated vegetables discussed earlier, dehydrated fruits, because of their small weight and volume, are convenient to store. Dehydrated fruits may be used for desserts such as puddings, pies, and cakes, or they may be reconstituted and served at any meal.

PREPARING DRIED FRUITS

Wash dried fruits thoroughly before they are used. They may be soaked to reduce cooking time, but avoid a long soaking period because it produces a watery, tasteless fruit. Cook raisins and dates without soaking. If sugar is to be added, it should be at the end of the cooking period. If it is added at the beginning, it interferes with the absorption of water.

SALADS

Salads have an important place on the menu. They contribute something both nutritious and refreshing to the lunch or dinner meal.

Fruit salads and vegetable salads are the most popular. They also introduce valuable vitamins, necessary minerals, and color into the meal.

Best of all–salads can be made quickly and easily if a few simple rules are followed, and this is equally true for individual salads which often seem more appetizing and receive greater acceptance than a large dish of salad.

Salads consisting of fruits, vegetables, meat or a combination of these ingredients provide a good menu for diet-conscious people or people who are trying to lose weight.

SALAD INGREDIENTS

Nearly all salads contain some fresh, crisp greens, at least as a garnish; beyond that, however, the range of ingredients is very wide. A salad may consist of greens tossed with dressing, or it may consist of a combination of vegetables or fruits (or both). There are also hearty salads which may be used as the main dish of the meal.

Salad Greens

Select your salad greens carefully. You have a wide choice of greens which are suitable for a salad foundation—lettuce, endive, escarole, young spinach, and cabbage. These may also be used as one of the main ingredients of the salad itself. Parsley and the inner tender leaves of curly endive are good for a garnish.

Sort, trim, wash, and crisp the greens before making the salad. Wash them carefully to free them of sand and earth particles. Drain them well. Hand cut the lettuce and cabbage into strips or pieces.

Place the prepared greens in pans, cover them with wax paper or a damp cloth and refrigerate. They should be drained thoroughly and be free of excess water before they are placed in the serving line. They should be one of the very last parts of the meal to be prepared.

Vegetables for Salads

Fresh, canned, or dehydrated vegetables may be used for salads. Select the fresh vegetables with care. Wash them thoroughly. Trim and peel them, if necessary, and cut them into uniform sizes. Cook those which need cooking. When canned vegetables are to be used in a salad, the liquid drained from the cans should be reserved and used in soups, sauces, or gravies. The canned vegetables may be marinated in french dressing prior to being used in a salad. Dehydrated cabbage, green peppers, onions, and string beans may be reconstituted and used in salads.

The salad made from dehydrated vegetables is a welcome addition to the menu aboard ships on long endurance voyages. Whether you use fresh, canned, or dehydrated vegetables for your salad, the prepared foods should be covered with waxed paper and placed in the refrigerator.

Main Course Salads

Salads used for the main course for lunch or dinner should be substantial and provide the food values comparable to any other main dish. These salads must include an adequate serving of high protein food, such as meat, fish, poultry, cheese, eggs, legumes (dried beans and peas), or peanuts, combined with crisp salad greens or other vegetables.Potato salad, cold or hot, may be an accompaniment to cold meats on a dinner or supper plate. Portions for main dish salads are comparatively large and mayonnaise or a mayonnaise-type dressing is usually served with the salad.

MIXING AND SERVING

Mix the salad carefully JUST BEFORE IT IS TO BE SERVED. Combine the prepared, chilled ingredients in small amounts. Mix or toss them lightly together. Use a large fork to distribute the ingredients and dressing.

Use of Salad Dressing

The salad dressing is as important as the salad itself. Each type of dressing can take on a new flavor by the addition of different seasonings and herbs.

As a rule, the dressing should be added to a fruit or raw vegetable salad not more than a few minutes before you are ready to serve the salad. If you are preparing salads to be set out on the salad bar, and you are placing the various types of salad dressings in separate containers so that each patron may have a choice. Remember to use small size containers for the dressings. Any salad dressing that is left over after the meal has been served should be discarded.

Serving the Salad

After a crisp, refreshing and attractive salad is produced it should be served so that none of this attractiveness is lost. Select a cool place for assembling and serving the salad. Bring individual salads from the refrigerator, a few at a time, so that they will remain crisp.

RELISHES

Relishes may be used in place of, or with, a salad. Raw carrots sliced lengthwise, celery, radishes, cauliflower flowerets, green pepper rings, olives, and pickles make excellent relishes and increase the attractiveness of a meal. Before they are served, all raw vegetables, except leafy varieties, should be refrigerated in icy cold water for an hour or more to make them crisp and tender.

DESSERTS

Dessert adds the finishing touch to a meal. A dessert should not be considered a sweet extra, but rather should be as important a part of the meal as the main course. The flavor of the dessert should blend with the other courses.

All foods in the meal should blend together and should provide contrasts of color, texture, temperature, shape, and flavor. All of these things should be considered when you plan the dessert. A dessert should harmonize with the food which preceded it. With a light meal, the dessert may be a hearty one. With a hearty meal a light dessert is in order. With a meal which has been rich and highly seasoned, a simple, mild-flavored dessert is best. The dessert should help balance the meal. Too many sweet-tasting foods with no tart food or too many tart foods without some sweet-tasting food is not satisfying. Therefore, a tart fruit dessert seems the perfect finishing touch for a roast pork dinner, and a raisin rice pudding is a good dessert for a main fish course served with lemon.

SANDWICHES

Sandwiches make satisfying meals and are especially convenient to serve in case of an emergency. This is true under battle feeding conditions when personnel are isolated from regular dining facilities, or under similar circumstances. When sandwiches are prepared, remember that they will probably be the primary item of that particular meal and should be substantial. Whenever possible, sandwiches should be served with a beverage, fruit or fruit juice, and raw vegetables which can be eaten from the hand. There is no limit to the interesting and tasty food combinations that can be used for filling sandwiches. Many good recipes are listed in your Armed Forces Recipe Service.

PREPARING SANDWICHES

Sandwiches may be made with any kind of bread. Varying the bread helps to avoid monotony. The kind of bread used should be appropriate for the type and flavor of the filling to be used; there is no set rule for such combinations as the choice is determined by individual taste. Sandwiches may be served hot or cold.

STORING SANDWICH BREAD

When you are making sandwiches, use slightly firm bread. Day old bread is preferable because it is more easily handled than freshly baked bread. Bread requires special handling to prevent it from becoming stale. To prevent moisture loss or absorption, observe the tips listed below on wrapping and storing bread and rolls.

1. Store bread in a moisture proof wrapper.
2. Do not store bread in chill spaces. Freezing freshly baked bread immediately after it is cooled will prevent it from becoming stale. If properly wrapped and kept in a moderate temperature (75° to 95°F), bread will stay fresh for approximately three days.
3. Maintain a clean, dry storage place for the bread and rolls, separate from other stores, to prevent absorption of odors and flavors.

Handling Procedures

The primary rule in sandwich making is–avoid advance preparation. Advance preparation hastens food spoilage and possible infection. The timing of sandwich making is extremely important. Not more than 3 hours cumulative time from preparation to consumption should elapse unless the sandwiches or fillings are refrigerated.

- Handle the bread and filling as little as possible. Do not use your hands directly on the food if tools or equipment can do the job efficiently.

- Make prepared filling only in such quantities as will be used during one serving period.

- Keep the filled sandwiches at a temperature of 40°F or lower if possible.

- Avoid leftovers. Do not use any foods for sandwich fillings, including leftover meat and eggs, that have been held at 40°F or over for more than 30 minutes. The bacteria grow more rapidly in some foods than in others. The use of pickle relish or slightly soured mayonnaise in sandwiches is of no practical value in the control of pathogens or toxins.

- Fillings should not be exposed to room temperature for long periods of time, since food poisoning bacteria grow rapidly in many sandwich fillings, especially those fillings containing eggs, moist lettuce, tomatoes, or similar foods. Bacteria will grow rapidly in the bread itself when it is moistened by mayonnaise or salad dressing.

- Immediately following the preparation, wrap each sandwich separately, if possible, and refrigerate. Never use a dampened cloth or towel to keep bread or sandwiches moist.

- Avoid stacking a large number of sandwiches or placing sandwiches in cardboard boxes. This method of storing actually insulates the food and prevents it from cooling as fast as it should to the desired storage temperature.

SANITARY PRECAUTIONS

- Always prepare sandwiches under sanitary conditions to prevent contamination. Possible sources of contamination are the equipment, the quality of ingredients, and the health and cleanliness of workers. Strict observance of the rules and regulations promulgated by the Medical Department and guidelines set forth by NAVMED P-5010.1 is vital, and adherence to these sanitation standards will ensure consumer confidence.

- Keep sandwich counter and equipment clean and sanitary by thorough daily care.

- Requisition and prepare refrigerated foods in quantities that will guarantee top-quality sandwiches, will ensure a rapid turnover, and will prevent spoilage.

- Clean the chill boxes and accessories regularly in order to keep mold and undesirable odors to a minimum.

- Handle bread and fillings as little as possible during all production processes. Avoid the use of hands directly on food if tools or equipment can do the job efficiently.

CEREALS

Cereals are foods made from grains of wheat, oats, corn, rice, rye, and barley. Cereals are often referred to as breakfast foods, but are not limited to the breakfast meal. Cereals can be used in many types of recipes.

Cereals are usually classed as carbohydrates and thus are known as energy foods. Some cereals have a great amount of protein and are body-building foods.

Cereals are divided into three main classifications: to-be-cooked, ready-to-eat, and instant.

There are two types of to-be-cooked cereals: (1) those which are prepared by quick-cooking; and (2) those that require a longer cooking period (sometimes called regular or old-fashioned).

Quick-cooking cereals have been manufactured to cook completely in a few minutes. In these cereals the pieces of grain are cut finer and rolled thinner than those in the longer-cooking class.

Longer-cooking, or old-fashioned cereals must be cooked for a longer period of time so that the starch is completely cooked.

Grains contain a large proportion of starch. The grains increase in bulk and become thicker as they are cooked. The cooking process makes the cereal starch soft and more easily digestible and develops the flavor. The starch in cereal cooks quickly; therefore, long, slow cooking is not necessary. Cooked cereal should be free from lumps, cooked to the proper consistency, neither too thick nor too thin. So that cooked cereal will retain its full flavor and not become too thick, it is best to cook it a short time before it is served. It should be served piping hot.

Both flaked granular cereals such as rolled oats and whole wheat cereal are cooked by sprinkling them into boiling, salted water. Cereals such as farina and cornmeal are made into a paste by mixing them in cold water; then the mixture is added to boiling, salted water. The water should continue to boil while the cereal is being added. Vigorous stirring or beating of the cereal while it cooks tends to make it sticky and gummy.

EGGS

Eggs are a valuable food. They contain minerals, vitamins, and protein which build new body tissues, repair old tissues and regenerate the blood. Eggs are easily digested and, if properly cared for and properly prepared, are delicate in flavor.

There are literally hundreds of ways in which eggs can be used in food preparation. Below are some of the ways in which eggs may be used:

- To thicken custards, puddings, and sauces.
- To leaven cakes and cookies.
- To add color, richness, and flavor to any dish in which they are used.
- To help provide a coating on breaded meats and fish.
- To be served as a colorful, good-tasting garnish for salads, soups, or cold meat platters.
- To bind ingredients together as in meat or fish loaves, and patties.
- To emulsify (help keep the right consistency of) salad dressings.

The Navy procures eggs in the following forms:

- Fresh shell eggs
- Frozen, table-type (whole eggs)
- Frozen, bakery-type (whole eggs)
- Frozen egg whites
- Dehydrated egg mix (prepared from fresh whole eggs and nonfat milk)

When several fresh eggs are to be used, break each one separately into a small dish. Thus any egg which may have a strong odor or poor appearance can be discarded without spoiling the others.

Frozen whole table-type eggs should be used for scrambled eggs and omelets. The bakery-type, frozen eggs, and frozen egg whites should be used ONLY in baking.

Dehydrated egg mix can be used to prepare scrambled eggs and omelets or it can be substituted for shell eggs in baking.

When you are using dehydrated egg mix as scrambled eggs, prepare no more than 25 portions at one time and prepare them no more than 10 minutes before they are to be served; they toughen if allowed to stand. Reconstitute the mix carefully with cool water using the instructions included with the product. Once reconstituted, the eggs must be used within 1 hour unless they are refrigerated. Diced cooked bacon, ham, sausage, luncheon meat, or cheese may be added to the eggs. The reconstituted mix should be treated with the same care as fresh eggs which have been removed from the shell. To provide more accurate measures and to prevent the formation of lumps, dehydrated egg mix should be sifted before it is measured. If a sifter is not available, the powder should be stirred with a fork or a wire whip to make it light and fluffy. The dehydrated egg mix will absorb moisture if it is exposed to the air; consequently, if should be stored in a cool, dry place in a tightly covered container. Whole, dried eggs, left uncovered near strong-flavored foods such as onions, lemons, or cheese, will absorb odors and flavors as readily as fresh eggs.

Fresh eggs which are stored at room temperature or allowed to remain at room temperature for a number of hours deteriorate rapidly.

BEVERAGES

One of the strongest indications of a well-run dining facility is good coffee. Knowing how to make good coffee and tea and being able to prepare other suitable beverages to accompany meals are skills that every MS should acquire.

COFFEE

Coffee is delicate and perishable. Ground coffee loses its flavor and aroma rapidly if it is exposed to the air. Coffee is vacuum packed in airtight containers. If the entire contents are not used when the can is opened, cover the container as tightly as possible.

You won't have any trouble making excellent coffee if you follow a few simple rules.

- Use the recipes given in the C (beverage) section of the Armed Forces Recipe Service.

- Always measure both the coffee and the water.

- Use fresh coffee at all times, and keep the coffee covered while it is brewing.

- Never allow coffee to remain in contact with boiling water, as the flavor and aroma will boil off.

- Remove the grounds as soon as the coffee is made. Seepage from the grounds will ruin the flavor of the best coffee.

- Brewed coffee should not be held for more than one hour as it deteriorates in flavor and loses its aroma.

- Most important of all, keep the coffee making equipment absolutely clean. Wash the urn with clear, hot water immediately after you have used it, and at the end of the day clean it with hot water and urn cleaner. Rinse thoroughly with clear water. Never use soap or soap powder.

- When the equipment is not in use, leave 1 or 2 gallons of clear water in the urn. Drain it before making fresh coffee.

- Remove the urn faucet once a day and scrub it with hot water, baking soda, and a brush. Use a tablespoon of baking soda for each quart of water BE SURE TO RINSE THOROUGHLY.

- Clean the glass gages at least twice a week with a brush, hot water, and baking soda.

- Rinse the urn bag in clear, cold water after each use. When not in use, keep the bag in cold water. Renew the cloth bag frequently.

TEA

Normally, two forms of tea are used; bulk tea and teabags. Instant, powdered tea, however, also has special uses in the military services.

The quantity of brewed tea depends upon how fast the boiling water extracts flavor and color from the tea leaves; it is the tannin present in the leaves that gives the tea a bitter taste. Improper temperatures, brewing too long, and holding tea too long for service will bring out the bitterness of the extracted tannin.

The proper quantities of both water and tea should be measured carefully. Never guess at the amounts.

Hot Tea

You won't have any trouble making excellent tea if you follow a few simple rules.

- When loose tea (not enclosed in cloth bag) is placed in the urn or kettle, the tea should be strained after it has steeped for 5 minutes.

- Tea should be made just before serving.

- Do not boil; this brings out the bitter taste.

- Schedule preparation so that not more than 15 minutes will elapse between its preparation and service; hold prepared tea at 175° to 185°F.

Iced Tea

The following points should be observed when preparing tea to be served iced:

- A stronger brew is required for iced tea than for hot tea because of the diluting action of the ice.
- A tea concentrate may be brewed and chilled, then diluted before serving.
- Do not add cold water to the concentrate; this may produce a cloudy tea infusion. The concentrate should be poured into the cold water.
- The tea may be presweetened by dissolving sugar in the hot concentrate before diluting it with cold water.
- If desired, cut lemons into eights to serve with tea.

Milk

Milk is one of our most important and most frequently used foods, as well as a popular beverage. Information concerning the types of milk and milk drinks used in the Navy is furnished in NAVSUP P-421.

OTHER DRINKS

The C (beverage) section of the recipe service contains many recipes for various fruit drinks and milk drinks that may be prepared and served with either lunch or dinner. When you prepare fruit drinks such as lemonade or grapeade, it is important to remember to make the drink early enough to allow time for thorough chilling in the refrigerator. If ice is used to chill the beverage, adjust the amount of water used.

CHAPTER 9

BAKING

Although the procurement of bakery products is now authorized for a wide variety of breads and pastries, baking facilities should be fully utilized if available at your activity.

The characteristics and quality of bakery products are determined primarily by the type and amount of ingredients used and by the baking process. To produce a satisfactory product you must have a thorough knowledge of these ingredients and the baking procedures you will be using.

Each baking product has a basic recipe which may be varied to some extent, but which must remain essentially the same to produce a satisfactory product. You should understand this basic recipe and the interaction of its ingredients which causes the dough or batter to rise and produce a satisfactory product.

Each of the different kinds of dough and batter is handled and panned in a specific way to produce the best results, and for each type of dough and batter there are instructions as to the proper baking time and temperature. Certain precautions must be observed in the preparation and storing of bakery products to protect them from spoilage.

BAKING INGREDIENTS

FLOUR

Flour can be milled from several types of grain; however, wheat is the one most widely used by the Navy. Wheat contains properties that make it possible to produce a raised bread. Wheat contains protein which, when combined with water, forms the elastic substance called "GLUTEN". Gluten given the dough expansion qualities.

Wheat flour is divided into hard and soft varieties, depending upon the type of wheat from which it is milled. Hard flour contains more protein and is used to make yeast bread and rolls; while soft flour is used to make cakes and cookies, and is blended with hard wheat flour to make quick breads. A hard wheat flour containing a good quality gluten is called a "strong flour." Soft wheat flour forms less gluten and produces a product of a finer texture. Sufficient structural material will therefore be provided for cakes and similar products without causing them to be too tough.

In addition to the protein, flour contains various food elements such as fat, carbohydrates, water, minerals, and vitamins. The amount of these elements contained in the flour varies with the type, grade, and storage period of the flour.

All flour is aged chemically, and no additional aging or blending is required.

Fat

Although the fat content of flour is very low, this fat will become rancid if flour is stored for long periods under warm and humid conditions.

Carbohydrates

Carbohydrates in flour are usually in the form of starch which absorbs water and helps give bulk to dough. Flour which is especially made for cakes and pastries is rich in carbohydrates.

Minerals

Minerals are contained in the bran coat and the germ of wheat, and most of the minerals are lost when wheat is made into white flour. These minerals are returned to flours which are enriched.

Enzymes

An enzyme is a very minute substance produced by a living plant. The mere presence of an enzyme brings about certain changes in the composition of a material. Diastase and protease are the most important enzymes found in flour.

Diastase.–Diastase converts starch to sugar, and the yeast acts upon the sugar to produce carbon dioxide and other fermentation products.

Protease.–Protease softens the gluten, and when this enzyme is lacking, the dough will not have the desired elasticity.

WATER

Water is one of the basic ingredients of bread. In many bakery products, including bread, the amount of water used is second only to the amount of flour. Water contains minerals. The amount and kind of minerals contained in the water varies from one part of the country to another. These variations affect the properties of dough and the finished bread.

Functions in Baking

Water is necessary to form gluten from the protein of flour, thereby giving the dough its elasticity and its gas retaining property. Gluten absorbs twice its own weight of water. The amount of water used determines the consistency and the temperature of the dough after it is mixed. Water dissolves the salt and the sugar, makes it possible for the enzymes to act, and holds the yeast in suspension until it is added to the other ingredients and the fermentation begins.

LEAVENING AGENTS

Leavening agents are gases that cause the dough to rise. The gases are produced by chemical action or introduced by the mixing process, which forces air into the dough. The common types of leavening agents are steam, air, and carbon dioxide gas.

Air

Air is introduced into the dough by blending (creaming) fat and sugar together, by sifting flour, or by folding in beaten egg whites which already contain air. Steam is used to leaven eclair and cream puffs. Carbon dioxide gas is created by using yeast, baking powder, or soda in the dough.

Yeast

Yeast is a microscopic, one-celled plant which, when conditions are favorable, will multiply by budding or by the division of a cell into two cells. In this process of reproduction, the yeast plant uses available food (sugars) to produce carbon dioxide gas and alcohol. This is known as fermentation.

Active Dry Yeast

Active dry yeast should be suspended in about seven times its weight of water at 105° F - 110° F for 5 minutes before it is used. The proper temperature of the water is important, as water that is too cold or too hot will harm the yeast. Ensure that the temperature of the water does not exceed 110° F. Active dry yeast does not require refrigeration, but should be stored in a dry and reasonably cool place. When properly stored, dry yeast will keep for many months.

Baking Soda

Baking soda acts as a leavening agent only when there is an acid present. Some of these acids are sour milk or buttermilk, molasses, brown sugar, honey, corn syrup, maple syrup, lemon juice, and vinegar. These are used for different types of quick bread. Only a limited quantity of the acid ingredients can be used for leavening purposes due to the pronounced flavor and heavy texture that soda and molasses or syrup give to the products. It is also difficult to determine beforehand the amount of gas that these mixtures will produce, so it is difficult to obtain standard results.

Baking Powder

Baking powder is a leavening agent which contains baking soda, a large amount of starch, and a material which forms an acid when it is mixed with water, thus producing a gas. There are several types of baking powder. The Navy uses a combination type baking powder, S.A.S., which contains two acid ingredients: sodium aluminum sulphate and orthophosphate plus sodium bicarbonate and a cornstarch filler. This type of baking powder is moderately double acting; one constituent acts in the batter, while the other does not act until it is heated in the oven. Baking powder is generally preferred over baking soda because it is more reliable.

SALT

Very little salt is used in breadmaking, but the amount used is essential, for it performs a very important function. Without salt, fermentation in dough is too rapid, and the baked product is too coarse, while too much salt slows the fermentation process and the bread is soggy. Salt strengthens gluten and helps it to expand, improves the color of baked products, and enhances the flavor.

SUGAR

During fermentation, part of the sugar is converted into a form that can be used as food for the yeast. Starches are converted into sugar that produces carbon dioxide gas and alcohol, which causes the dough to expand, making it softer and more pliable.

This sugar in the bread contributes to the color of the crust, the taste of the baked loaf, the toasting qualities of the bread, the texture, the moisture retaining qualities, and the nutritional value. Sugar is also a tenderizer.

All sugars do not have the same degree of sweetness, since sweetness depends upon the refining process through which the sugar has passed. Brown sugar, for example, is less highly refined than white sugar, and therefore is not so sweet. Brown sugar lends a pleasant taste to cooked or baked products, and syrups can be used as a substitute for regular sugar. Corn syrup, honey, or molasses improves the flavor of cookies and helps retain their moisture.

SHORTENING

Shortening is the animal or vegetable fat which is used in baking. There are two types of shortening—solid and liquid. The solid type shortening is recommended for use in bread dough because it can be more thoroughly distributed through the dough. The reason for this is that it will not saturate the flour with which it comes in contact. The oil type shortening can be used effectively, provided the dough is well formed before the oil is added.

Butter

Butter is the fatty constituent of milk which is separated from the other milk constituents by churning. Butter is used most often as a spread, but it has many other uses in food preparation. When butter is substituted for other shortening, you should adjust your recipe. Butter contains salt, milk and moisture so the salt, milk and liquid in the recipe should be decreased accordingly. The fat content of butter is less than that of other shortening; therefore, more butter should be used in the recipe.

Other Types of Fats

Shortening compounds are composed of deoderized animal and vegetable fats mechanically blended to give a final product of acceptable elasticity and satisfactory baking quality. There are two types of shortening compound used in Navy dining facilities: general purpose shortening and bakery shortening (emulsifier type).

Bakery shortening or emulsifier type shortening is hydrogenated shortening to which an emulsifying agent has been added. This gives the shortening exceptional ability to blend with other ingredients.

General purpose shortening is a high grade shortening that has excellent baking qualities. General purpose shortening should not be substituted in recipes that specify baker-type shortening.

Salad oils are generally used in the preparation of salad dressing and in recipes which specify oil. Oil should not be substituted for general purpose or emulsifier type shortening in recipes specifying those types.

Action of Shortening

Shortening produces tenderness in baked products, adds flavor and richness, helps produce better grain and texture, and makes the products stay fresh longer.

MILK

Milk is almost a complete food. Nonfat dry milk contains all the food qualities of whole milk except fat. In bread production, nonfat dry milk style A should be used, as this milk is designed specifically for achieving volume, flavor, and crust characteristics desirable in yeast breads. Dry milk can be added by mixing or sifting the milk and flour together, or it can be reconstituted with part of the water in the bread recipe and added to the dough. In either event, it is important that there are no lumps of milk powder in the dough.

The amount of milk used in the dough can be as high as six percent nonfat dry milk based on the weight of the flour. The use of more than six percent dry milk in the bread dough is detrimental to fermentation. Milk improves the texture, flavor, and keeping quality of bread.

EGGS

Eggs are not used in making white bread but are used in making sweet doughs, cakes, and cookies. In baked products, eggs supply a high protein, mineral, and vitamin content. The yolks add color, the whites help bind other ingredients, and both combine to add flavor and moisture to the bread.

Fresh eggs should be removed from the refrigerator and warmed to room temperature before they are used in dough. Frozen eggs should be completely defrosted before they are added to the dough, and should be well mixed. Dehydrated egg mix may be sifted with the dry ingredients in some baked products containing a high percentage of dry ingredients; the water needed to reconstitute eggs should be added to the required liquid. Reconstituted eggs must be used within one hour after they are reconstituted or returned to the refrigerator until they are to be used. Do not hold them overnight.

BREAD MAKING

Bread is the most important food produced by the baker. It is prepared in greater quantities than any other baked product. High quality and excellent taste must be maintained, regardless of the amount of bread baked.

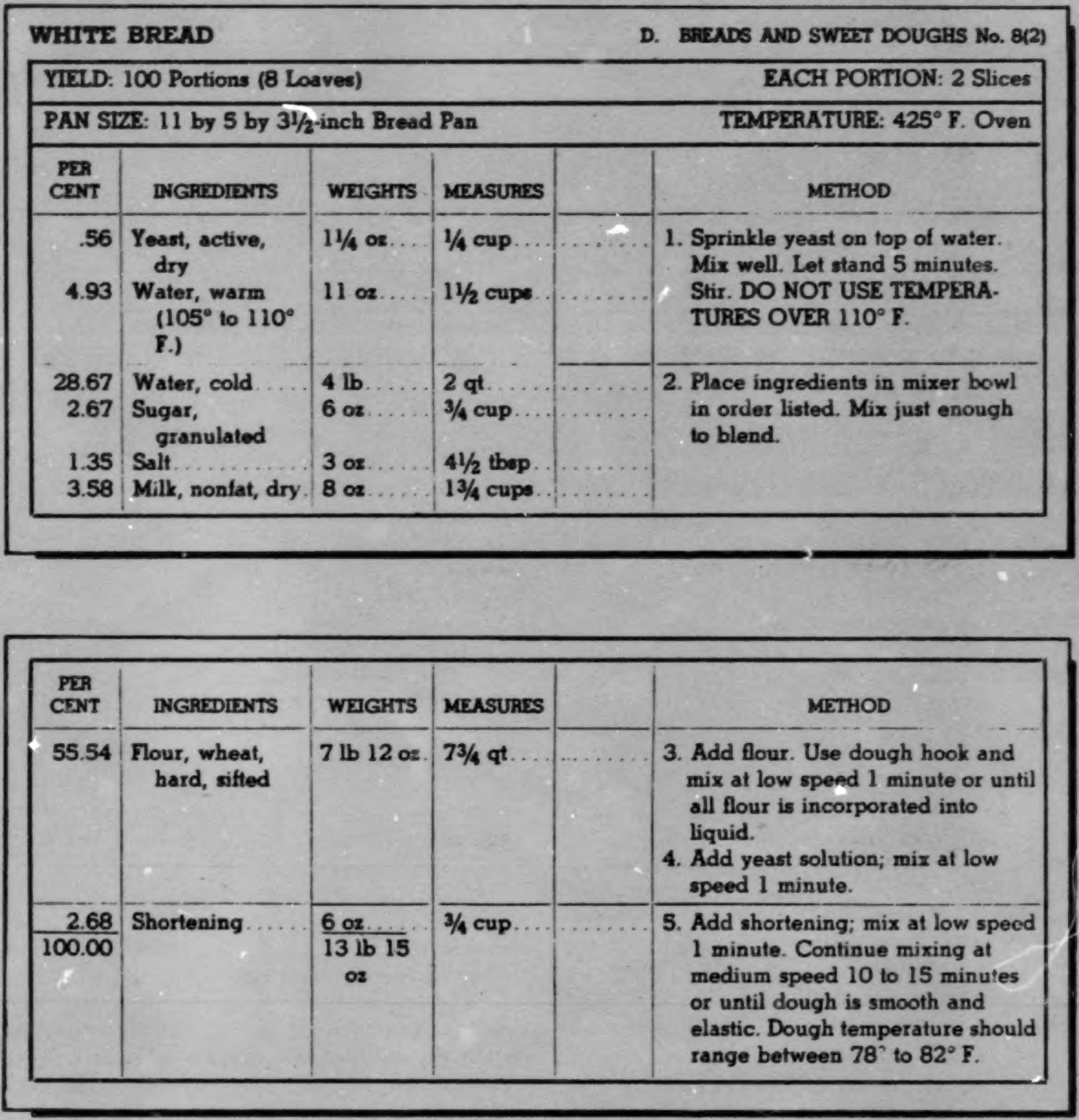
PROCESSES

The processes described below include not only the steps that you, the baker, perform but also the processes that take place within the dough as a result of your action. (Figure 9-1 and Figure 9-2)

Mixing

After you select and weigh or measure the necessary ingredients, the next important step is mixing. Dough must be mixed thoroughly to make it smooth, to distribute the ingredients evenly, and to develop the gluten fully. Dough may be mixed by hand, but an electric mixer or a breaddough machine will make the job easier. (See Chapter 5). The time and speed of mixing vary with the type of mixer used, the kind of dough being prepared, and the strength of the flour.

To be able to make good quality bread, you must know the desired temperature of the bread dough after the mixing process is complete. Also, you will have to know how to achieve the desired temperature. FOOD SERVICE



WHITE BREAD

D. BREADS AND SWEET DOUGHS No. 8(2)

YIELD: 100 Portions (8 Loaves)	EACH PORTION: 2 Slices
PAN SIZE: 11 by 5 by 3½-inch Bread Pan	TEMPERATURE: 425° F. Oven

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
.56	Yeast, active, dry	1¼ oz	¼ cup		1. Sprinkle yeast on top of water. Mix well. Let stand 5 minutes. Stir. DO NOT USE TEMPERATURES OVER 110° F.
4.93	Water, warm (105° to 110° F.)	11 oz	1½ cups		
28.67	Water, cold	4 lb	2 qt		2. Place ingredients in mixer bowl in order listed. Mix just enough to blend.
2.67	Sugar, granulated	6 oz	¾ cup		
1.35	Salt	3 oz	4½ tbsp		
3.58	Milk, nonfat, dry	8 oz	1¾ cups		

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
55.54	Flour, wheat, hard, sifted	7 lb 12 oz	7¾ qt		3. Add flour. Use dough hook and mix at low speed 1 minute or until all flour is incorporated into liquid. 4. Add yeast solution; mix at low speed 1 minute.
2.68	Shortening	6 oz	¾ cup		5. Add shortening; mix at low speed 1 minute. Continue mixing at medium speed 10 to 15 minutes or until dough is smooth and elastic. Dough temperature should range between 78° to 82° F.
100.00		13 lb 15 oz			

48.47.5

Figure 9-1a.—Recipe for white bread.

WHITE BREAD D. BREADS AND SWEET DOUGHS No. 8(3)

METHOD FOR HANDLING MIXED DOUGH

6. FERMENT: Set in warm place (80° F.) 2 hours or until double in bulk.
7. PUNCH: Fold sides into center and turn dough completely over. Let rest 30 minutes.
8. MAKE UP: Scale into 8-27 oz pieces. Round up and let rest 12 to 15 minutes.
9. Mold each piece.
10. Place one piece in each lightly greased pan.
11. PROOF: At 90° to 100° F. about 1 hour or until double in size.
12. BAKE: 35 to 40 minutes.

NOTE: In Step 8, when using $9\frac{7}{8}$ by $4\frac{1}{4}$ by $2\frac{3}{4}$-inch bread pans, scale into 12-18 oz pieces. In Step 12, bake at 450° F. 25 to 30 minutes.

48.47.5

Figure 9-1b.—Recipe for white bread—continued.

OPERATIONS (NAVSUP PUB 421) describes the process in detail.

Fermentation

Fermentation is the chemical change that takes place when yeast (or other leavening agent) in the bread releases carbon dioxide gas, causing it to rise. The fermentation period is the time which elapses between the mixing of the dough and the time the yeast is killed by the oven heat. The correct temperature for the dough during fermentation is indicated on the Recipe Service Card. A higher temperature will cause the growth of undesirable bacteria (wild yeast) and excessive acidity, which will result in a coarse-grained bread of poor flavor.

The length of the fermentation period depends upon the amount of yeast used, the strength of the flour, and the temperature during fermentation. Too much yeast and higher temperatures than those designated cause the dough to rise too fast. Insufficiently fermented or conditioned dough is called "young dough" while that which has fermented too long is known as "old dough."

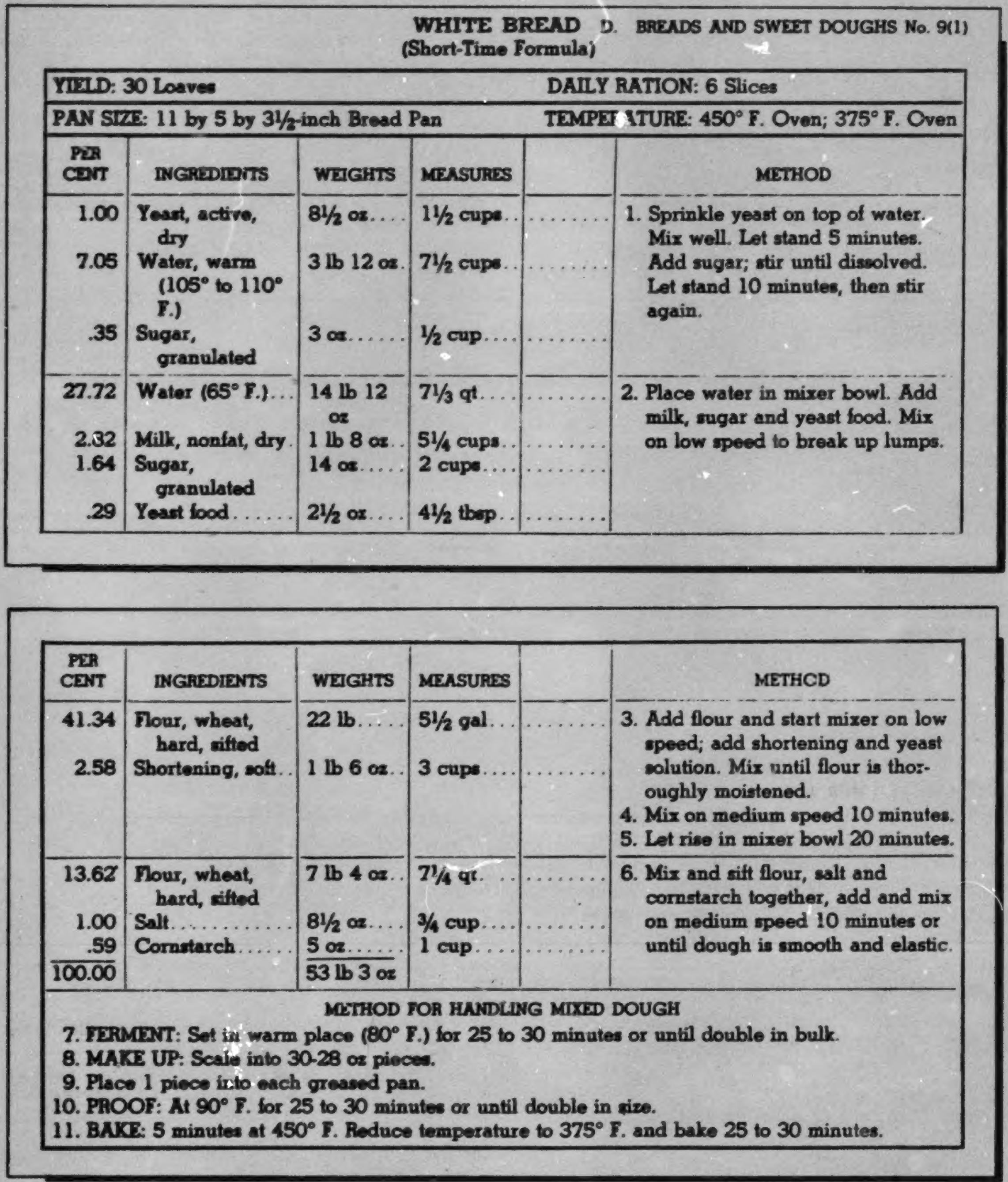
Punching

Punching the dough after it rises develops the gluten, and also redistributes the yeast cells. The temperature of the dough is equalized, and some of the carbon dioxide gas is forced out. Yeast dough is ready for punching when it is light and approximately double in size. To test the dough to determine if it is ready for punching, press the dough lightly with a finger tip. If the impression closes up immediately, the dough is not ready. If the impression that is made in the dough recedes slightly, the dough is ready to be punched or folded. The dough should then be punched, rounded up and allowed to rise for about 12 to 15 minutes or until it doubles in size. This is called intermediate proofing. During this time, the dough is allowed to rest and recover from being rounded. It becomes loose enough so that it can be easily handled.

When it has doubled in size it should be punched the second time. It is now ready for make up.

Make Up

The first step in making up a dough is to divide it into small uniform portions. (Figure



WHITE BREAD D. BREADS AND SWEET DOUGHS No. 9(1)
(Short-Time Formula)

YIELD: 30 Loaves DAILY RATION: 6 Slices

PAN SIZE: 11 by 5 by 3½-inch Bread Pan TEMPERATURE: 450° F. Oven; 375° F. Oven

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
1.00	Yeast, active, dry	8½ oz	1½ cups		1. Sprinkle yeast on top of water. Mix well. Let stand 5 minutes. Add sugar; stir until dissolved. Let stand 10 minutes, then stir again.
7.05	Water, warm (105° to 110° F.)	3 lb 12 oz	7½ cups		
.35	Sugar, granulated	3 oz	½ cup		
27.72	Water (65° F.)	14 lb 12 oz	7⅓ qt		2. Place water in mixer bowl. Add milk, sugar and yeast food. Mix on low speed to break up lumps.
2.32	Milk, nonfat, dry	1 lb 8 oz	5¼ cups		
1.64	Sugar, granulated	14 oz	2 cups		
.29	Yeast food	2½ oz	4½ tbsp		

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
41.34	Flour, wheat, hard, sifted	22 lb	5½ gal		3. Add flour and start mixer on low speed; add shortening and yeast solution. Mix until flour is thoroughly moistened. 4. Mix on medium speed 10 minutes. 5. Let rise in mixer bowl 20 minutes.
2.58	Shortening, soft	1 lb 6 oz	3 cups		
13.62	Flour, wheat, hard, sifted	7 lb 4 oz	7¼ qt		6. Mix and sift flour, salt and cornstarch together, add and mix on medium speed 10 minutes or until dough is smooth and elastic.
1.00	Salt	8½ oz	¾ cup		
.59	Cornstarch	5 oz	1 cup		
100.00		53 lb 3 oz			

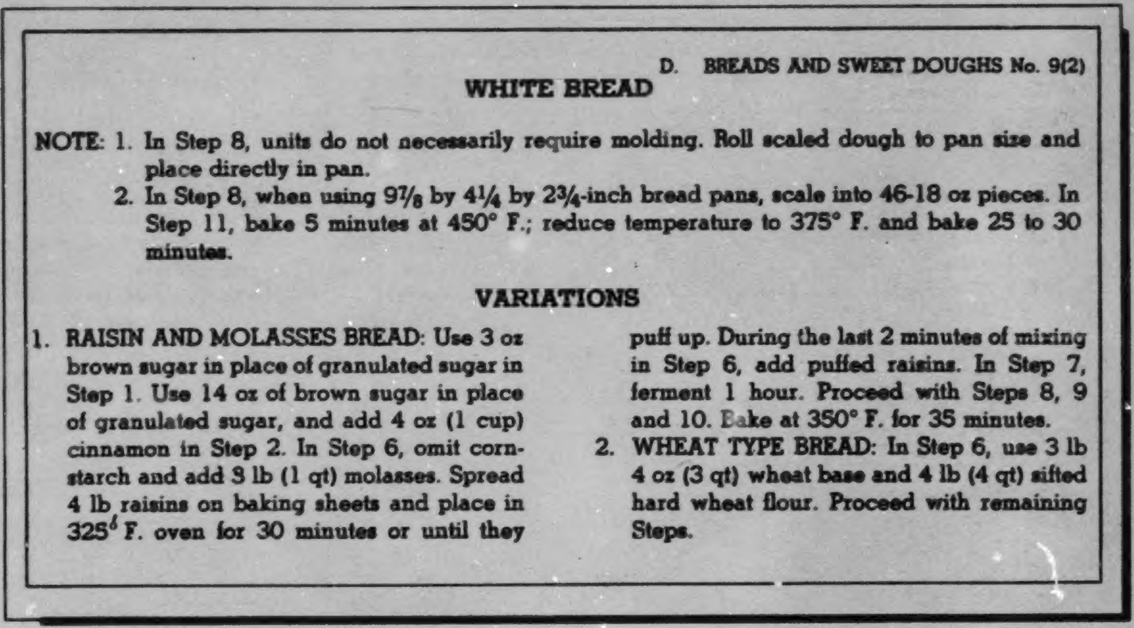
METHOD FOR HANDLING MIXED DOUGH

7. FERMENT: Set in warm place (80° F.) for 25 to 30 minutes or until double in bulk.
8. MAKE UP: Scale into 30-28 oz pieces.
9. Place 1 piece into each greased pan.
10. PROOF: At 90° F. for 25 to 30 minutes or until double in size.
11. BAKE: 5 minutes at 450° F. Reduce temperature to 375° F. and bake 25 to 30 minutes.

199

48.47.5A

Figure 9-2a.—Recipe for white bread using short time formula.



D. BREADS AND SWEET DOUGHS No. 9(2)

WHITE BREAD

NOTE: 1. In Step 8, units do not necessarily require molding. Roll scaled dough to pan size and place directly in pan.

2. In Step 8, when using 9⅞ by 4¼ by 2¾-inch bread pans, scale into 46-18 oz pieces. In Step 11, bake 5 minutes at 450° F.; reduce temperature to 375° F. and bake 25 to 30 minutes.

VARIATIONS

1. RAISIN AND MOLASSES BREAD: Use 3 oz brown sugar in place of granulated sugar in Step 1. Use 14 oz of brown sugar in place of granulated sugar, and add 4 oz (1 cup) cinnamon in Step 2. In Step 6, omit cornstarch and add 3 lb (1 qt) molasses. Spread 4 lb raisins on baking sheets and place in 325° F. oven for 30 minutes or until they puff up. During the last 2 minutes of mixing in Step 6, add puffed raisins. In Step 7, ferment 1 hour. Proceed with Steps 8, 9 and 10. Bake at 350° F. for 35 minutes.
2. WHEAT TYPE BREAD: In Step 6, use 3 lb 4 oz (3 qt) wheat base and 4 lb (4 qt) sifted hard wheat flour. Proceed with remaining Steps.

48.47.5A

Figure 9-2b.—Recipe for white bread using short time formula—continued.

9-3.) When the dough is divided by machine, you won't have to worry about size; but when you divide it by hand, it must be scaled to make sure each piece is the same size. When you divide dough, allow for a loss in the baking process. This baking loss is approximately 10 percent of the total weight before baking. To make up the dough follow the steps listed below:

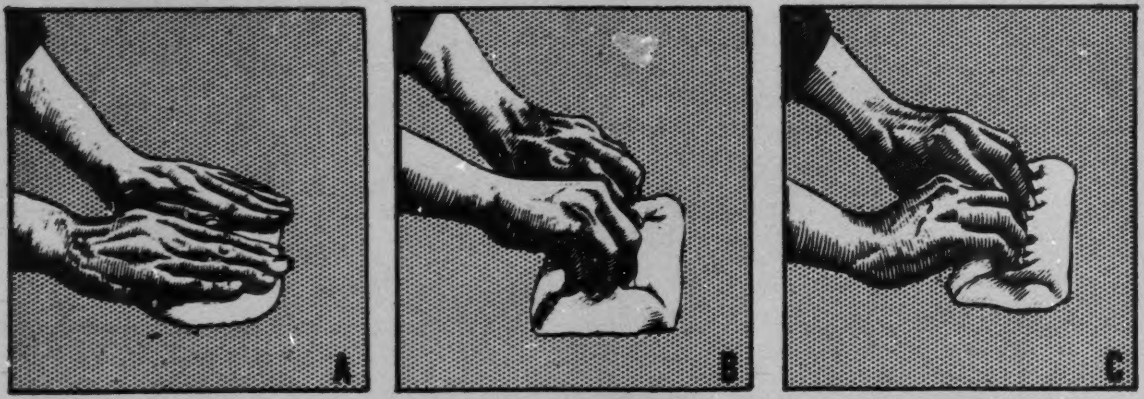
1. Place each piece of dough on the board, top side down. Use as little dusting flour as possible.
2. Press the gas out of the dough and pull lengthwise carefully, shaping the dough into an oblong loaf about the length of a finished loaf of bread.
3. Flatten the dough with your hands or with a rolling pin.
4. Shape the dough by folding in the ends to form a rectangle.
5. Fold it lengthwise to the center and seal by firm finger pressure.
6. Fold over the other half of the dough and press for additional seal.
7. Roll the dough to complete the sealing and molding of the loaf.

After the dough is molded into a loaf, place it in a lightly greased pan. Each loaf should be placed so that the molding seam is on the bottom, and the loaf should be long enough to reach the ends of the pan.

Pan Proofing

After shaping and panning, loaves should be placed in a properly controlled room or cabinet called the proof box or proof cabinet, for the final or pan proof. Temperature of the cabinet should be maintained at 90° F to 100° F. During pan proofing, the action of the yeast is speeded up by the higher temperature and the gluten becomes more mellow and more elastic.

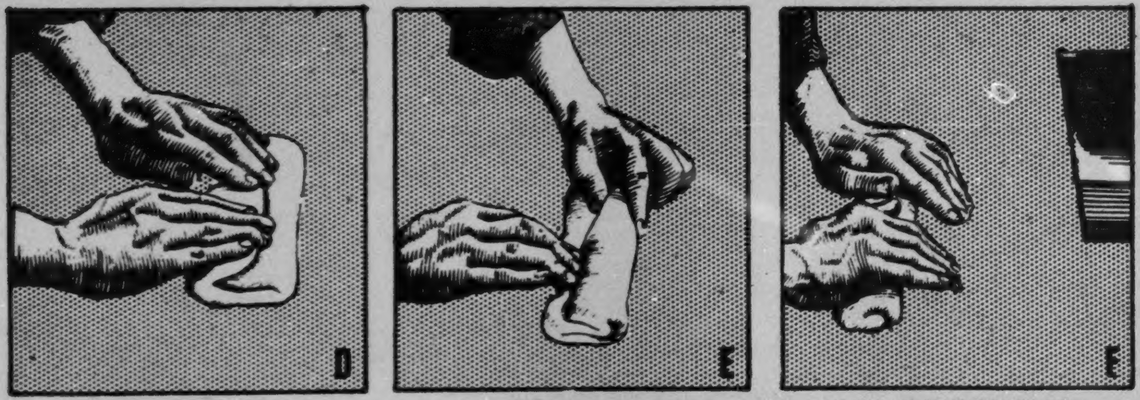
To determine whether the loaf is properly proofed, touch the loaf lightly with one



PRESS GAS OUT OF DOUGH

FORM RECTANGLE

FOLD RECTANGLE LENGTHWISE



PRESS FIRMLY TO SEAL

FOLD AGAIN

ROLL TO COMPLETE SEALING

48.53

Figure 9-3.—Making up bread dough.

fingertip and press in slightly. If the impression made by the tip of the finger remains, the loaf is proofed. If the imprint does not remain and fills out when the fingertip is removed the loaf is still too tight and compact and should be proofed more. Usually, 50 or 75 minutes time is sufficient.

Baking and Cooling

Baking time for breads and pastries varies with the size of the pan and the amount of dough scaled into each pan. When the oven is fully loaded, the bread will not bake as rapidly as in a lightly loaded oven. Correct oven temperatures must be maintained if you expect your products to be baked properly.

Place the pans of dough in the oven carefully, because a jolt will affect the body of the dough. Remember the order in which the pans were placed in the oven; the first one placed in the oven should be the first to be removed. Make sure that all pans are properly spaced so that the bread can be baked on all sides. When the internal temperature reaches 208°-210° F the bread is done. Remove the loaves from the pans, and place them on racks to cool, making sure that there is at least a 1-inch space between loaves. Cooling usually takes from 1 1/2 to 2 hours. Bread should not be covered while it is warm.

UNDESIRABLE CONDITIONS

Certain undesirable conditions may develop in the baking and storing of bread that will not only spoil individual loaves and batches but will infest the bakery and continue to destroy subsequent bakings. Sanitary precautions against these conditions are particularly necessary in hot, humid climates.

Rope

Rope is an undesirable condition of bread caused by bacteria. The crumb of the loaf deteriorates, darkens, and becomes sticky and wet. If the loaf is pulled apart, long, wet strands will appear as it separates. Rope has an odor similar to overripe cantaloupe.

The rope spores that are formed from the active rope bacteria cells are highly resistant to heat, and any that may be near the center of the loaf will not necessarily be killed by baking.

Temperatures of 86° F and above, particularly temperatures of 95° to 105° F, promote the development of rope. When the climatic condition is such that the shop temperature is high, rope could develop even in doughs that are lower in temperature than 85° F. In the tropics, high humidity often accompanies high temperature. This increases the danger of rope developing in the bread. Also doughs that are not sufficiently acid are highly subject to rope infection. Since acidity is normally increased through fermentation, an overly warm dough may not have time to become sufficiently acid to retard the development of rope.

When the weather or climate is hot and humid, you should keep a sharp lookout for the appearance of rope, and do everything in your power to prevent its development. By controlling the temperature of the doughs, you can keep them cold enough to retard the development of rope. A mold-preventive product called "Inhibitor, Mold and Rope, Bakery Products" can be added to the bread dough.

To prevent the development of rope, you should take the following steps:

- Baking ingredients should not be kept in the shop longer than necessary, and those that are kept should be arranged in such a way as to allow free circulation of air around them.
- The bread baking schedule should be planned so that the bakery is not overstocked; this would result in some of the bread becoming old in the shop or in the storage room.
- Bread that has accumulated and has become stale may be used for croutons and crumbs.
- All bread should be thoroughly cooled before it is stored.
- Keep equipment scrupulously clean and see that no pieces of previous doughs are allowed to remain in the shop. The shop and all equipment should be thoroughly cleaned as soon after it is used as possible.

In the event that rope does develop in your shop, it will be necessary to kill all the rope bacteria before you do any more baking.

- Dispose of all baked products and baking ingredients in the shop.
- Thoroughly clean the shop and all the equipment.
- Wash the bulkheads, decks, and overhead with hot soapy water and rinse them thoroughly.
- Remove all foreign matter from all equipment and tools and from the cracks and seams in the oven.
- Sterilize the work bench and all small equipment.
- Rinse down everything a second time with a strong vinegar and water solution.

Mold

Mold is composed of tiny plants which are visible to the naked eye. There are many types of mold which vary in form and color. They form velvety, colored spots on the bread and create a musty odor. Mold spores are present in the air and will become visible on almost any food substance if they are given sufficient time under proper conditions to develop. Mold will multiply in a warm, humid atmosphere or on moist food. The absence of light and sufficient time also contributes to their growth. Mold first appears on the side of the loaf.

Mold is not resistant to heat, therefore, mold that may be present in baking ingredients will probably be killed during baking. This means that any mold on the baked bread is a result of improper handling of the bread after it is baked.

To prevent the formation of mold in the bake shop, take the following steps:

- Keep the shop clean and dry.
- Ensure proper circulation of air in the shop.
- Ensure that all areas are lighted.
- Bake bread thoroughly and cool properly before storing it.
- Always avoid handling the bread with wet or damp hands.
- Ensure that bread is not kept for any length of time, since bread molds very quickly in storage.

ROLLS

Several types of hot rolls can be made from the basic recipe in the Armed Forces Recipe Service (Figure 9-4).

The method of making rolls is the same as that used for making bread. However, less mixing is required and the dough is much softer. Careful handling of the dough will ensure light, tender rolls.

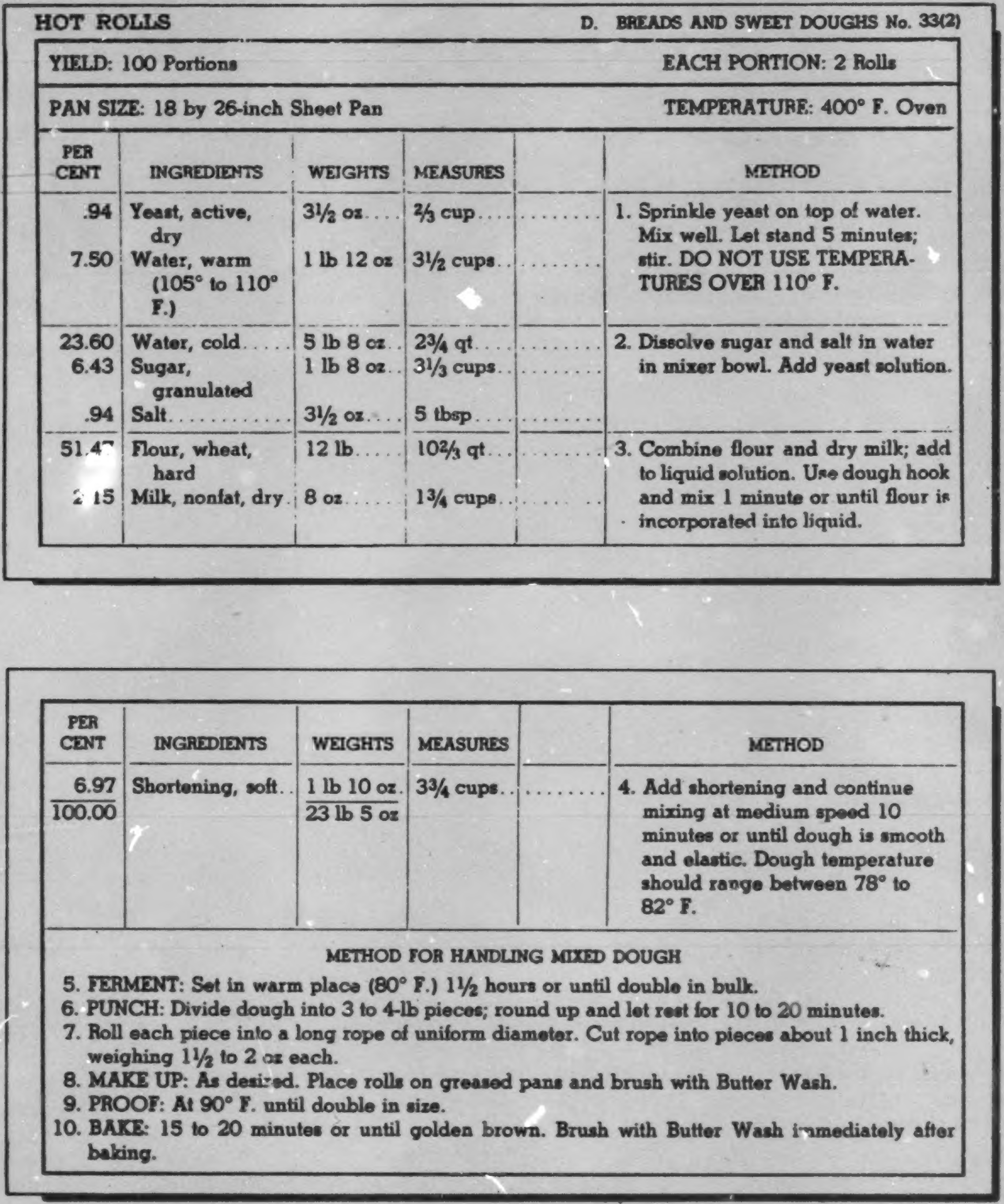
To make up the rolls, take the following steps:

- Divide the dough into 3 or 4 pound pieces.
- Roll each piece of dough into a strip 1 1/2 inches in diameter.
- Cut each strip into pieces weighing approximately 2 ounces each (Figure 9-5A).
- Round each piece into a ball by rolling it with a circular motion on the work bench (Figure 9-5B).
- When you have performed these basic steps you are ready to shape the dough into sandwich rolls (Figure 9-5C), parker house rolls (Figure 9-5D, E, and F), weiner rolls (Figure 9-5G), or dinner rolls (Figure 9-5H).

SWEET ROLLS

A wide variety of sweet rolls can also be made from the simple basic sweet dough recipe (Figure 9-6). Sweet dough is prepared from a bread formula high in sugar, shortening, eggs, and other enriching ingredients. There are two types of sweet dough—regular sweet dough and Danish pastry. Products prepared from either of these doughs may be similar in size, shape, and weight but will differ considerably in texture. The fine, even grain and texture of regular sweet dough items are quite different from the flaky texture of the Danish pastry products. The dough should be smoother than bread dough, but it should not stick to your hands.

Among the types of sweet rolls that can be made from this basic recipe are cinnamon buns (Figure 9-7), butterfly rolls (Figure 9-8), doubleleaf rolls, pecan rolls, twists, chaintwists, braids, bear claws, crullers, snails, crescents, raisin buns, hot cross buns, plain coffee cake, small coffee cakes, and Swedish tea rings (Figure 9-9). Specific instructions for making each of these types of sweet rolls from the basic dough recipe are given in the Armed Forces Recipe Service.



HOT ROLLS D. BREADS AND SWEET DOUGHS No. 33(2)

YIELD: 100 Portions EACH PORTION: 2 Rolls

PAN SIZE: 18 by 26-inch Sheet Pan TEMPERATURE: 400° F. Oven

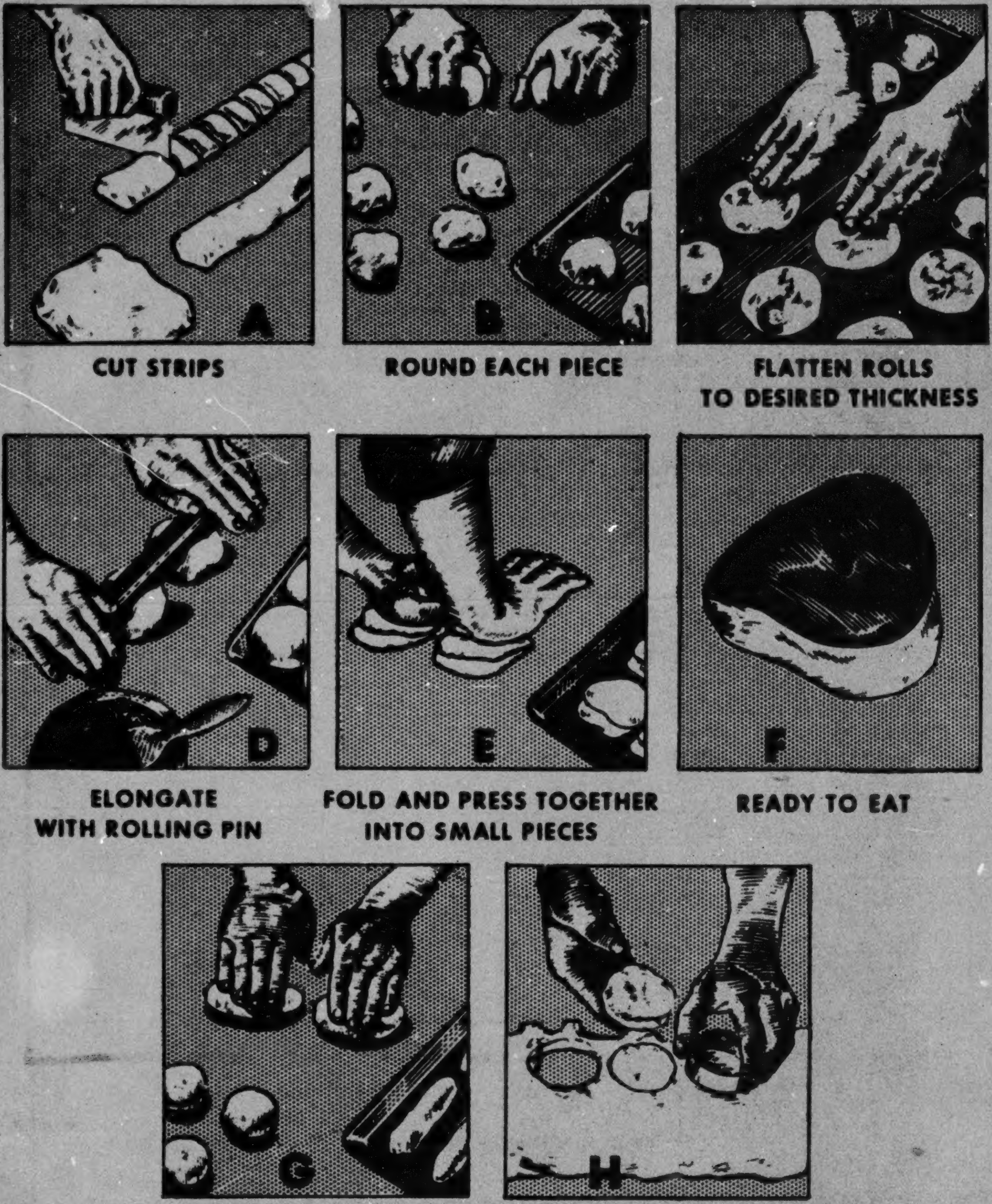
PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
.94 7.50	Yeast, active, dry Water, warm (105° to 110° F.)	3½ oz 1 lb 12 oz	⅔ cup 3½ cups		1. Sprinkle yeast on top of water. Mix well. Let stand 5 minutes; stir. DO NOT USE TEMPERATURES OVER 110° F.
23.60 6.43 .94	Water, cold Sugar, granulated Salt	5 lb 8 oz 1 lb 8 oz 3½ oz	2¾ qt 3⅓ cups 5 tbsp		2. Dissolve sugar and salt in water in mixer bowl. Add yeast solution.
51.47 2.15	Flour, wheat, hard Milk, nonfat, dry	12 lb 8 oz	10⅔ qt 1¾ cups		3. Combine flour and dry milk; add to liquid solution. Use dough hook and mix 1 minute or until flour is incorporated into liquid.
6.97 100.00	Shortening, soft	1 lb 10 oz 23 lb 5 oz	3¾ cups		4. Add shortening and continue mixing at medium speed 10 minutes or until dough is smooth and elastic. Dough temperature should range between 78° to 82° F.

METHOD FOR HANDLING MIXED DOUGH

5. FERMENT: Set in warm place (80° F.) 1½ hours or until double in bulk.
6. PUNCH: Divide dough into 3 to 4-lb pieces; round up and let rest for 10 to 20 minutes.
7. Roll each piece into a long rope of uniform diameter. Cut rope into pieces about 1 inch thick, weighing 1½ to 2 oz each.
8. MAKE UP: As desired. Place rolls on greased pans and brush with Butter Wash.
9. PROOF: At 90° F. until double in size.
10. BAKE: 15 to 20 minutes or until golden brown. Brush with Butter Wash immediately after baking.

48.47.7

Figure 9-4.—Recipe for hot rolls.



CUT STRIPS

ROUND EACH PIECE

FLATTEN ROLLS
TO DESIRED THICKNESS

ELONGATE
WITH ROLLING PIN

FOLD AND PRESS TOGETHER
INTO SMALL PIECES

READY TO EAT

SHAPE WIENER ROLLS

CUT OUT DINNER ROLLS

48.54

Figure 9-5.—Rolls.

SWEET DOUGH D. BREADS AND SWEET DOUGHS No. 36(2)

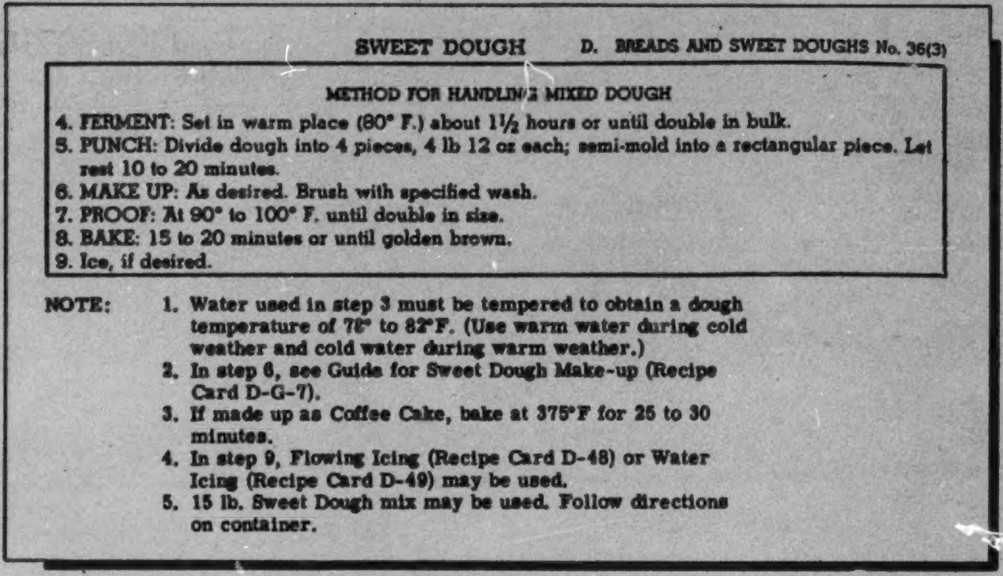
YIELD: 100 Portions	EACH PORTION: 2 Rolls
PAN SIZE: 18 by 26-inch Sheet Pan	TEMPERATURE: 400° F. Oven

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
2.52	Yeast, active, dry	8 oz	1½ cups		1. Sprinkle yeast on top of water. Mix well. Let stand 5 minutes. Stir. DO NOT USE TEMPERATURES OVER 110° F.
2.59	Water, warm (105° to 110° F.)	1 lb 8 oz	3 cups		

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
16.30	Water	2 lb 4 oz	4 1/2 cup		2. Place ingredients in mixer bowl in order listed. Add yeast solution.
8.81	Sugar, granulated	1 lb 12 oz	1 qt		3. Use dough hook and mix at low speed for 1 minute or until all flour is incorporated into liquid. Continue mixing at medium speed 10 minutes or until dough is smooth and elastic. Dough temperature should range between 78° to 82° F.
.95	Salt	3 oz	4½ tbsp		
8.18	Shortening, soft	1 lb 10 oz	3 ¾ cups		
8.81	Eggs, whole, beaten	1 lb 12 oz	3½ cups (18 eggs)		
50.35	Flour, wheat, hard	10 lb	9 qt		
1.50	Milk, nonfat, dry	4¾ oz	1 cup		
100.00		19 lb 13¾ oz			

48.47.8

Figure 9-6a.—Recipe for sweet dough.



SWEET DOUGH D. BREADS AND SWEET DOUGHS No. 36(3)

METHOD FOR HANDLING MIXED DOUGH

4. FERMENT: Set in warm place (80° F.) about 1½ hours or until double in bulk.
5. PUNCH: Divide dough into 4 pieces, 4 lb 12 oz each; semi-mold into a rectangular piece. Let rest 10 to 20 minutes.
6. MAKE UP: As desired. Brush with specified wash.
7. PROOF: At 90° to 100° F. until double in size.
8. BAKE: 15 to 20 minutes or until golden brown.
9. Ice, if desired.

NOTE:

1. Water used in step 3 must be tempered to obtain a dough temperature of 78° to 82°F. (Use warm water during cold weather and cold water during warm weather.)
2. In step 6, see Guide for Sweet Dough Make-up (Recipe Card D-G-7).
3. If made up as Coffee Cake, bake at 375°F for 25 to 30 minutes.
4. In step 9, Flowing Icing (Recipe Card D-48) or Water Icing (Recipe Card D-49) may be used.
5. 15 lb. Sweet Dough mix may be used. Follow directions on container.

48.47.8

Figure 9-6b.—Recipe for sweet dough—continued.

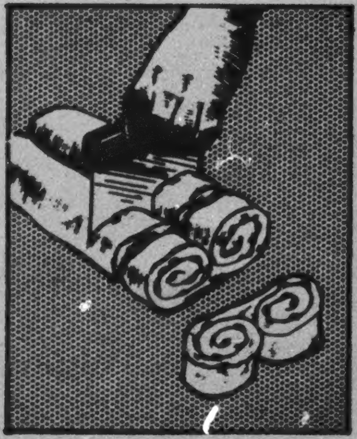


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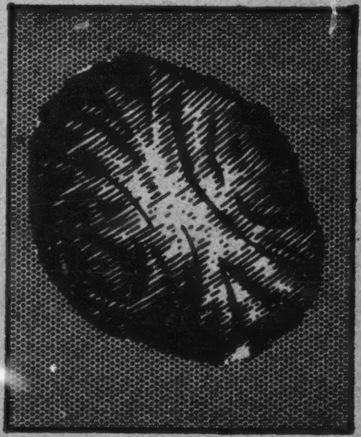
Figure 9-7.—Double cinnamon buns.



48.56

Figure 9-8.—Baked butterfly roll.

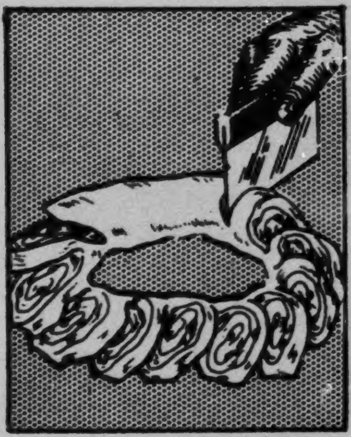
Much of the attractiveness of sweet rolls is due to the glazes and fillings used. You will find the recipes for these glazes and fillings in the Armed Forces Recipe Service–Frostings and Fillings, section D.

QUICK BREADS

Quick breads include griddle cakes, muffins, and biscuits. They are called quick breads because a quick-acting leavening agent, baking powder or baking soda is used, and a comparatively short time is required to mix and bake them.

There are two kinds of batters, soft and rollout batter. If the product is to be muffins or griddle cakes, the recipe will make a soft batter that may be dropped or poured. If the batter is to be rolled or cut for baking powder biscuits or cake doughnuts, the mix will require a lower proportion of liquid. The mixing of the batter is always kept to the very minimum when the leavening is produced by baking powder or baking soda.

The basic Armed Forces Recipe for baking powder biscuits is given in Figure 9-10. Note that if time and space are limited, the dough may be cut into squares instead of circles (Figure 9-11.) This eliminates re-rolling. Also, in order to plan work, biscuits may be panned and placed in the refrigerator 1 hour or more before baking time. This does not mean, of course, that they can be held indefinitely before they are baked.



48.57

Figure 9-9.—Swedish tea ring.

Recipes in the Armed Forces Recipe Service outline, step by step, the method for mixing quick bread batters.

CAKES

Cakes are popular desserts in the Navy dining facility. A wide variety of colors from a few basic recipes is possible through the use of varied shapes, frostings, or fillings. Cakes are easily made in large quantities and they are less perishable than many other types of desserts. Service in the dining facility is greatly facilitated by the use of cakes for dessert because they can be made up ahead of time.

TYPES OF CAKES

Cakes can be divided into three separate groups according to the ingredients and the proportions of the ingredients used in each. The three groups are: batter cakes, foam cakes, and chiffon cakes.

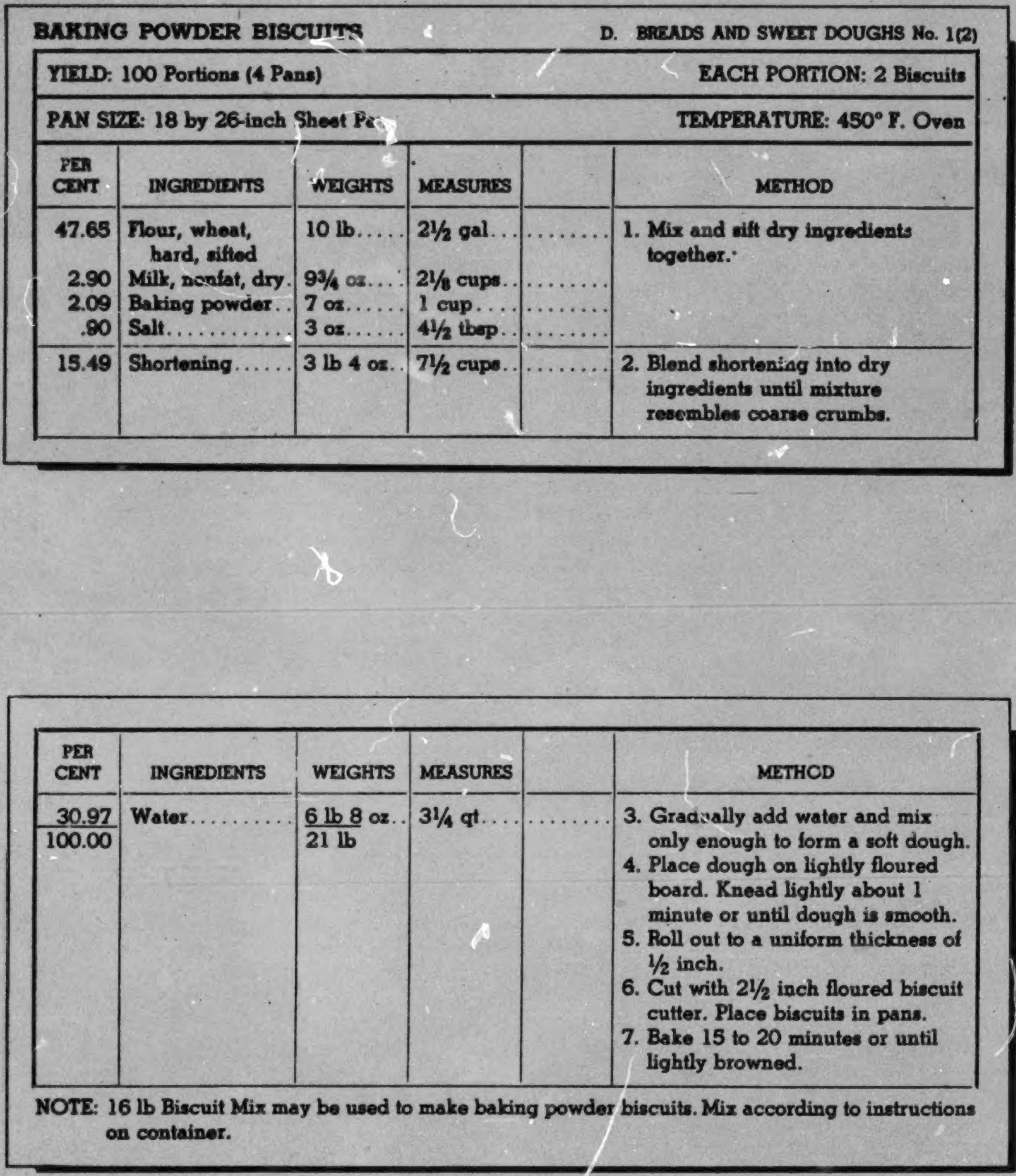
Batter Cakes

Batter cakes contain shortening. They include:

Pound cake (loaf type) containing high percentages of fat.

Plain cakes (basic type or layer) containing smaller percentages of fat.

Chocolate cakes (cakes incorporating cocoa and soda) such as devil's food and mild chocolate cakes.



BAKING POWDER BISCUITS D. BREADS AND SWEET DOUGHS No. 1(2)

YIELD: 100 Portions (4 Pans) EACH PORTION: 2 Biscuits

PAN SIZE: 18 by 26-inch Sheet Pan TEMPERATURE: 450° F. Oven

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
47.65	Flour, wheat, hard, sifted	10 lb	2½ gal		1. Mix and sift dry ingredients together.
2.90	Milk, nonfat, dry	9¾ oz	2⅛ cups		
2.09	Baking powder	7 oz	1 cup		
.90	Salt	3 oz	4½ tbsp		
15.49	Shortening	3 lb 4 oz	7½ cups		2. Blend shortening into dry ingredients until mixture resembles coarse crumbs.

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
30.97	Water	6 lb 8 oz	3¼ qt		3. Gradually add water and mix only enough to form a soft dough.
100.00		21 lb			4. Place dough on lightly floured board. Knead lightly about 1 minute or until dough is smooth.
					5. Roll out to a uniform thickness of ½ inch.
					6. Cut with 2½ inch floured biscuit cutter. Place biscuits in pans.
					7. Bake 15 to 20 minutes or until lightly browned.

NOTE: 16 lb Biscuit Mix may be used to make baking powder biscuits. Mix according to instructions on container.

48.47.9

Figure 9-10a.—Recipe for baking powder biscuits.

D. BREADS AND SWEET DOUGHS No. 1(3)

BAKING POWDER BISCUITS

VARIATIONS

1. BUTTERSCOTCH PINWHEEL BISCUITS: Divide dough into 8 pieces. Roll each piece into a rectangular shape 20 inches long and 9 inches wide. Brush with 1 lb (2 cups) melted butter or margarine. Combine 4 lb (2¾ qt) brown sugar and 1½ lb (1½ qt) chopped nuts; sprinkle evenly on top of dough. Roll dough as for Jelly Roll. Cut into slices ¾ inch thick. Place cut-side down on lightly greased pan. Bake at 425° F. about 15 to 20 minutes.
2. CHEESE BISCUITS: In Step 1, add 2 lb (2 qt) grated natural cheddar cheese to dry ingredients. Bake at 425° F. about 15 minutes.
3. CINNAMON PINWHEEL BISCUITS: Follow procedures for Butterscotch Pinwheel Biscuits. Brush with 1 lb (2 cups) melted butter or margarine. Combine 3 lb (6¾ cups) granulated sugar and 4 oz (1 cup) ground cinnamon; sprinkle evenly on top of dough. Soak 3 lb (2¼ qt) raisins in hot water 10 minutes; drain; cool. Sprinkle raisins on top of sugar and cinnamon mixture.

48.47.9

Figure 9-10b.—Recipe for baking powder biscuits—continued.

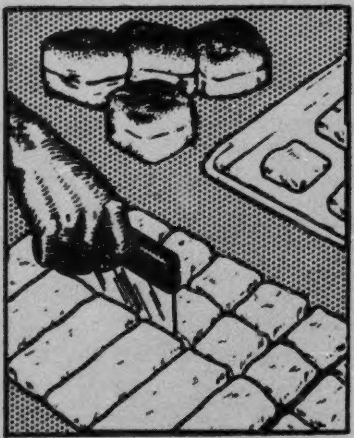


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Figure 9-11.—Cutting biscuits.

Foam Cakes

Foam cakes, containing no fat, include:

Angel food cakes, in which only egg whites are used for foam.

Sponge cakes, in which whole eggs or egg yolks (or a combination of these) are used for foam.

Chiffon Cakes

Chiffon cakes contain both foam and batter, mixed separately and folded to a mixture.

The subdivisions of the three groups are many and generally depend upon the method of incorporating the ingredients and upon the variation of ingredients added to the basic recipe. Batter and sponge type cakes are the ones normally prepared in Navy dining facilities; consequently, further discussion will relate only to these.

FUNCTIONS OF CAKE INGREDIENTS

Each ingredient in a basic recipe has a specific function.

Flour furnishes structure and is used to hold the other materials together in making a cake. It should be a soft wheat flour.

Sugars, used chiefly as sweeteners, have a tenderizing effect resulting from their ability to soften flour protein and starches. By lowering the caramelization point of the batter, sugars allow the cake crust to color at a lower temperature. Sugars also help to retain moisture in the baked cake, thereby keeping the cake moist and edible for several days.

Shortening carries the air which is incorporated in the finished cake batter; this air has a tenderizing action on the cake by virtue of its leavening action. Shortening makes the baked product tender and is considered to be a tenderizing agent.

Eggs furnish structure, moisture, flavor, and color. Egg whites for whipping must be free from grease or traces of egg yolk—as little as one tenth of one percent will adversely affect the whipping quality.

Milk, water, fruit juice, or coffee can be used as the liquid in cake. Liquid is needed to combine and activate all other ingredients. It controls the consistency of the finished cake batter.

Salt brings out the flavor of the other ingredients.

Leavening is accomplished in three ways: incorporation of air during mixing, chemical leavening, and vaporization of liquids in the dough by the heat of the oven. The manner of leavening depends upon the type of cake being made (the richness of formula, consistency of batter, and baking temperature).

CAKE MAKING

In addition to the proper selection of ingredients, accurate measuring, and thorough mixing, three other factors influence the finished baked products:

Panning

Panning is the amount of batter used in a pan of given diameter and depth. It helps to determine whether the cake is moist or dry. The batter should be divided evenly by scaling or by the use of a measure, then spread evenly in the pan with a spatula. Do not rap the pan on the work table to level the batter, as this will knock out all the air that was incorporated during mixing.

Baking Temperature

Baking temperature is of the utmost importance, for it determines the texture of the baked product. The oven temperature and baking time vary with the type of product to be baked. The recipes in the Armed Forces Recipe Service note the correct oven temperature and baking time for the various types of baked products.

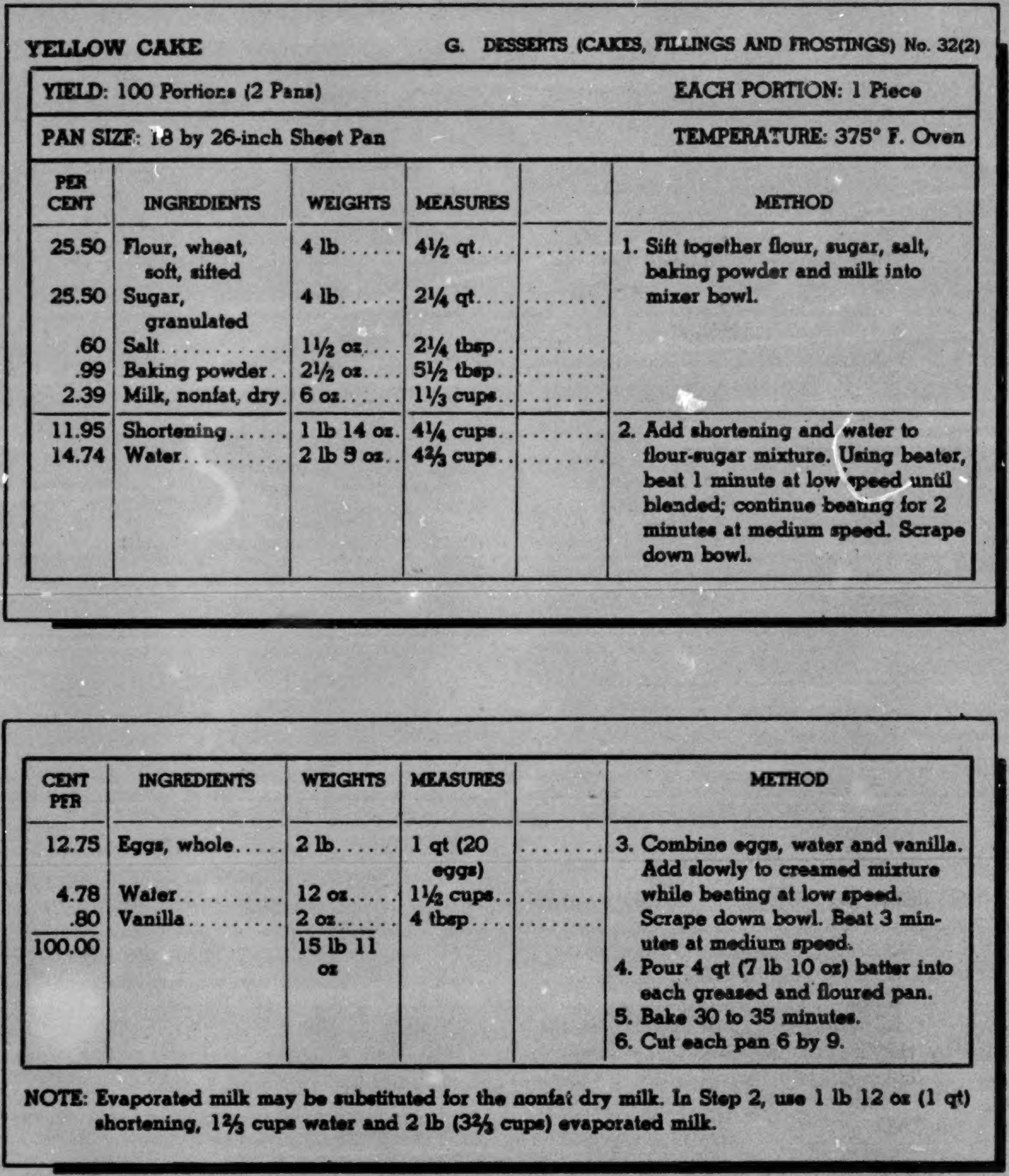
CAUTION: Do not slam the oven door while you have a product in the oven.

Cooling

Cooling the cakes before they are removed from the pan or before they are iced is important. The time will vary with the thickness of the cake and the room temperature, but a minimum of 10 minutes cooling time should be allowed. Loaf or pound cakes should be cooled for 30 minutes before they are removed from the pans.

Variations of Plain Cake

The Armed Forces Recipe Service recipe for a plain cake made with shortening is shown in (Figure 9-12). Variations of this cake may be made by adding fillings, frostings, or sauces. Recipes for the variations are included in the receipe service.



YELLOW CAKE G. DESSERTS (CAKES, FILLINGS AND FROSTINGS) No. 32(2)

YIELD: 100 Portions (2 Pans)	EACH PORTION: 1 Piece
PAN SIZE: 18 by 26-inch Sheet Pan	TEMPERATURE: 375° F. Oven

PER CENT	INGREDIENTS	WEIGHTS	MEASURES		METHOD
25.50	Flour, wheat, soft, sifted	4 lb	4½ qt		1. Sift together flour, sugar, salt, baking powder and milk into mixer bowl.
25.50	Sugar, granulated	4 lb	2¼ qt		
.60	Salt	1½ oz	2¼ tbsp		
.99	Baking powder	2½ oz	5½ tbsp		
2.39	Milk, nonfat, dry	6 oz	1⅓ cups		
11.95	Shortening	1 lb 14 oz	4¼ cups		2. Add shortening and water to flour-sugar mixture. Using beater, beat 1 minute at low speed until blended; continue beating for 2 minutes at medium speed. Scrape down bowl.
14.74	Water	2 lb 5 oz	4⅔ cups		

CENT PER	INGREDIENTS	WEIGHTS	MEASURES		METHOD
12.75	Eggs, whole	2 lb	1 qt (20 eggs)		3. Combine eggs, water and vanilla. Add slowly to creamed mixture while beating at low speed. Scrape down bowl. Beat 3 minutes at medium speed.
4.78	Water	12 oz	1½ cups		
.80	Vanilla	2 oz	4 tbsp		
100.00		15 lb 11 oz			4. Pour 4 qt (7 lb 10 oz) batter into each greased and floured pan. 5. Bake 30 to 35 minutes. 6. Cut each pan 6 by 9.

NOTE: Evaporated milk may be substituted for the nonfat dry milk. In Step 2, use 1 lb 12 oz (1 qt) shortening, 1⅔ cups water and 2 lb (3⅔ cups) evaporated milk.

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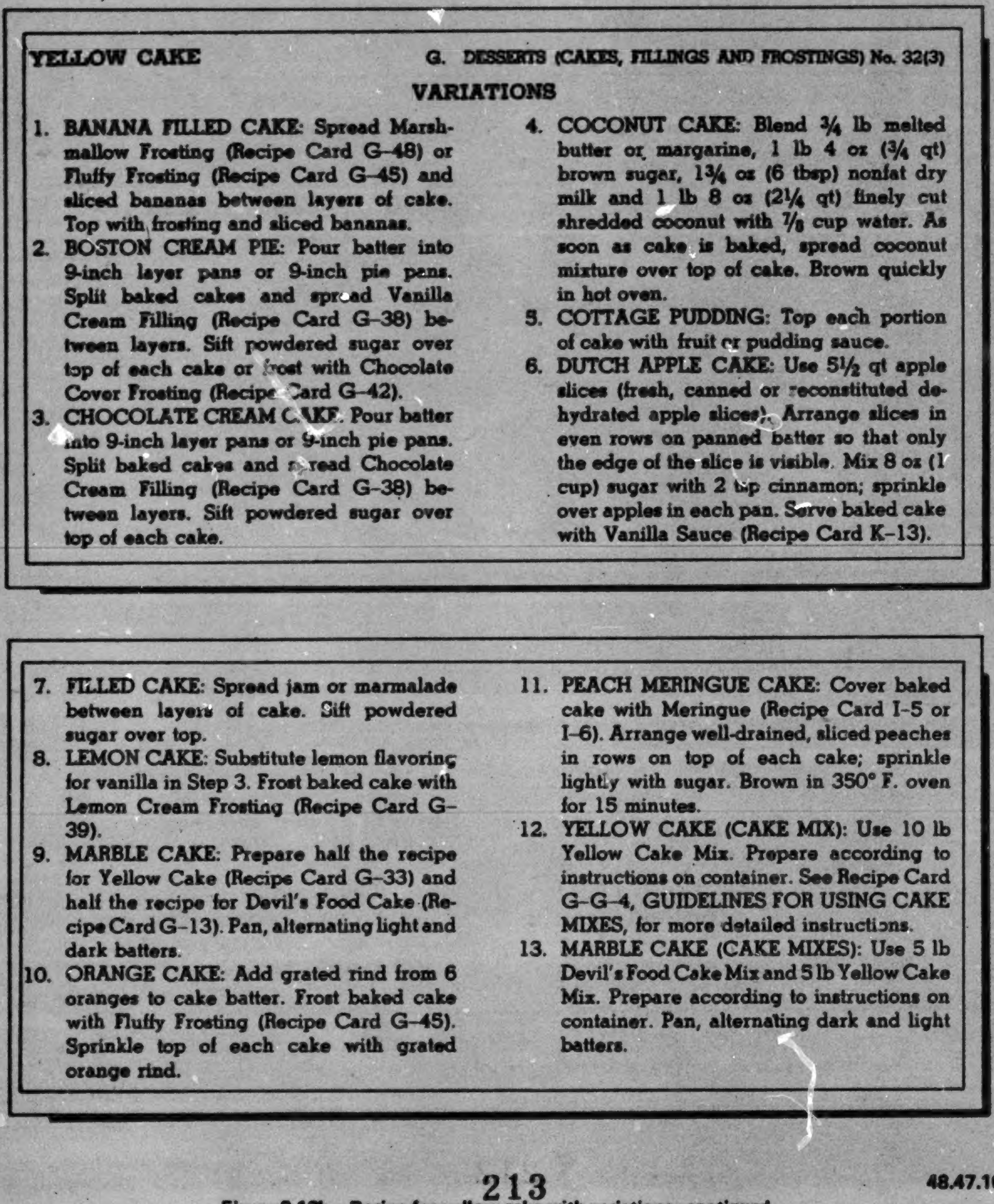
Figure 9-12a.—Recipe for yellow cake with variations.



YELLOW CAKE G. DESSERTS (CAKES, FILLINGS AND FROSTINGS) No. 32(3)

VARIATIONS

1. BANANA FILLED CAKE: Spread Marshmallow Frosting (Recipe Card G–48) or Fluffy Frosting (Recipe Card G–45) and sliced bananas between layers of cake. Top with frosting and sliced bananas.
2. BOSTON CREAM PIE: Pour batter into 9-inch layer pans or 9-inch pie pans. Split baked cakes and spread Vanilla Cream Filling (Recipe Card G–38) between layers. Sift powdered sugar over top of each cake or frost with Chocolate Cover Frosting (Recipe Card G–42).
3. CHOCOLATE CREAM CAKE: Pour batter into 9-inch layer pans or 9-inch pie pans. Split baked cakes and spread Chocolate Cream Filling (Recipe Card G–38) between layers. Sift powdered sugar over top of each cake.
4. COCONUT CAKE: Blend ¾ lb melted butter or margarine, 1 lb 4 oz (¾ qt) brown sugar, 1¾ oz (6 tbsp) nonfat dry milk and 1 lb 8 oz (2¼ qt) finely cut shredded coconut with ⅞ cup water. As soon as cake is baked, spread coconut mixture over top of cake. Brown quickly in hot oven.
5. COTTAGE PUDDING: Top each portion of cake with fruit or pudding sauce.
6. DUTCH APPLE CAKE: Use 5½ qt apple slices (fresh, canned or reconstituted dehydrated apple slices). Arrange slices in even rows on panned batter so that only the edge of the slice is visible. Mix 8 oz (1 cup) sugar with 2 tsp cinnamon; sprinkle over apples in each pan. Serve baked cake with Vanilla Sauce (Recipe Card K–13).
7. FILLED CAKE: Spread jam or marmalade between layers of cake. Sift powdered sugar over top.
8. LEMON CAKE: Substitute lemon flavoring for vanilla in Step 3. Frost baked cake with Lemon Cream Frosting (Recipe Card G–39).
9. MARBLE CAKE: Prepare half the recipe for Yellow Cake (Recipe Card G–33) and half the recipe for Devil's Food Cake (Recipe Card G–13). Pan, alternating light and dark batters.
10. ORANGE CAKE: Add grated rind from 6 oranges to cake batter. Frost baked cake with Fluffy Frosting (Recipe Card G–45). Sprinkle top of each cake with grated orange rind.
11. PEACH MERINGUE CAKE: Cover baked cake with Meringue (Recipe Card I-5 or I–6). Arrange well-drained, sliced peaches in rows on top of each cake; sprinkle lightly with sugar. Brown in 350° F. oven for 15 minutes.
12. YELLOW CAKE (CAKE MIX): Use 10 lb Yellow Cake Mix. Prepare according to instructions on container. See Recipe Card G–G–4, GUIDELINES FOR USING CAKE MIXES, for more detailed instructions.
13. MARBLE CAKE (CAKE MIXES): Use 5 lb Devil's Food Cake Mix and 5 lb Yellow Cake Mix. Prepare according to instructions on container. Pan, alternating dark and light batters.

Figure 9-12b.—Recipe for yellow cake with variations—continued.

FROSTINGS

Frostings make a cake more tasty, increase eye appeal, and add food value. Frostings may be cooked or uncooked, depending on the texture of the cake. Rich cakes require simple frostings, while plain cakes may be more elaborately iced. Some frostings are also used as fillings; some fillings, however, are of an entirely different substance than the frosting. A spatula should be used to spread the frosting on the cake. Butter cream is the richest frosting (Figure 9-13). The recipe for cooked frosting will vary a little with each type of frosting. Check the recipe service card for the specific type desired.

COOKIES

Cookies are a popular dessert. Unlike most other desserts they can be stored for a day or more and used as they are needed. The various types of cookies are defined by the special processes used in making them. These types and processes are described below. General directions for successful cookie making are summarized.

TYPES OF COOKIES

Cookies are of five types: rolled, dropped, refrigerator, bar, and sheet.

Rolled Cookies

The dough for rolled cookies should be made as soft as can be handled. It may be more easily rolled if it is chilled before it is used. Rolling a small part of the dough at one time facilitates handling and lessens the amount of rerolling. The dough is usually rolled to a thickness of 1/4 inch and cut with a 2-inch floured cutter. The side of the spatula should be used for removing cookies from the board to the baking sheets.

Dropped Cookies

Dropped cookies are made from a soft dough. The consistency determines whether the cookies will be rough or flat and how well they will hold their shape. The dough is dropped on greased floured baking sheets.

Refrigerator Cookies

To make refrigerator cookies, cut the dough into 10-ounce pieces and shape into rolls. Wrap each roll of dough in waxed paper, place in a pan, and chill or refrigerate overnight. The chilled rolls of dough are sliced with a knife or electric slicer, placed on baking pans and baked.

Bar Cookies

Bar cookies are made of dough which is rolled into a strip 22 inches in length or to fit the sheet pan. Fold the two ends of the strip toward the center in order to move it to the baking sheet. Leave a small space between strips. Use your fingers to shape the dough in uniform 3 to 4 inch strips. Brush the top of the dough with egg wash, if desired. After the bars are baked and cooled, cut them diagonally into pieces about two inches in width.

Sheet Cookies

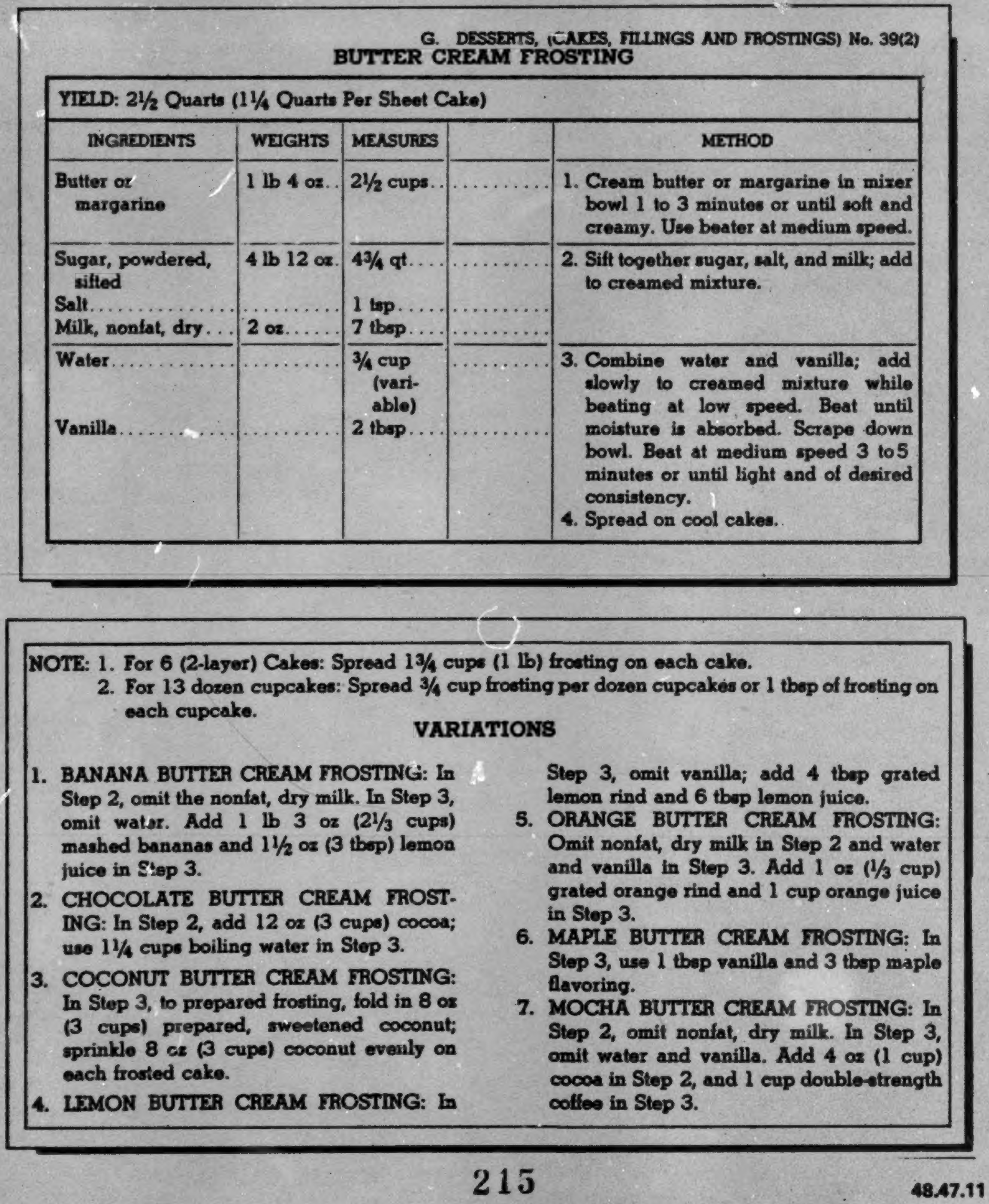
To make sheet cookies, spread the batter into shallow greased pans. Bake them in a moderate oven. Cut into squares or strips while they are still warm. Coat them with powdered sugar if desired.

SUCCESSFUL COOKIE MAKING

Recipes in the Armed Forces Recipe Service outline step-by-step methods for preparing all types of cookies, and these should be consulted and followed. There are certain general principles, however, that you can learn and apply to all cookie making. Below are some of the most important.

Cookie dough should be mixed just enough to incorporate the ingredients thoroughly.

Pans used for baking cookies should be clean, dry, and smooth. Examine the pans carefully before you use them. Dirty or bent



G. DESSERTS, (CAKES, FILLINGS AND FROSTINGS) No. 39(2)

BUTTER CREAM FROSTING

YIELD: 2½ Quarts (1¼ Quarts Per Sheet Cake)

INGREDIENTS	WEIGHTS	MEASURES		METHOD
Butter or margarine	1 lb 4 oz	2½ cups		1. Cream butter or margarine in mixer bowl 1 to 3 minutes or until soft and creamy. Use beater at medium speed.
Sugar, powdered, sifted	4 lb 12 oz	4¾ qt		2. Sift together sugar, salt, and milk; add to creamed mixture.
Salt		1 tsp		
Milk, nonfat, dry	2 oz	7 tbsp		
Water		¾ cup (variable)		3. Combine water and vanilla; add slowly to creamed mixture while beating at low speed. Beat until moisture is absorbed. Scrape down bowl. Beat at medium speed 3 to 5 minutes or until light and of desired consistency. 4. Spread on cool cakes.
Vanilla		2 tbsp		

NOTE: 1. For 6 (2-layer) Cakes: Spread 1¾ cups (1 lb) frosting on each cake.
2. For 13 dozen cupcakes: Spread ¾ cup frosting per dozen cupcakes or 1 tbsp of frosting on each cupcake.

VARIATIONS

1. BANANA BUTTER CREAM FROSTING: In Step 2, omit the nonfat, dry milk. In Step 3, omit water. Add 1 lb 3 oz (2⅓ cups) mashed bananas and 1½ oz (3 tbsp) lemon juice in Step 3.
2. CHOCOLATE BUTTER CREAM FROSTING: In Step 2, add 12 oz (3 cups) cocoa; use 1¼ cups boiling water in Step 3.
3. COCONUT BUTTER CREAM FROSTING: In Step 3, to prepared frosting, fold in 8 oz (3 cups) prepared, sweetened coconut; sprinkle 8 oz (3 cups) coconut evenly on each frosted cake.
4. LEMON BUTTER CREAM FROSTING: In Step 3, omit vanilla; add 4 tbsp grated lemon rind and 6 tbsp lemon juice.
5. ORANGE BUTTER CREAM FROSTING: Omit nonfat, dry milk in Step 2 and water and vanilla in Step 3. Add 1 oz (⅓ cup) grated orange rind and 1 cup orange juice in Step 3.
6. MAPLE BUTTER CREAM FROSTING: In Step 3, use 1 tbsp vanilla and 3 tbsp maple flavoring.
7. MOCHA BUTTER CREAM FROSTING: In Step 2, omit nonfat, dry milk. In Step 3, omit water and vanilla. Add 4 oz (1 cup) cocoa in Step 2, and 1 cup double-strength coffee in Step 3.

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Figure 9-13.—Recipe for butter cream frosting.

pans will cause the cookies to stick or bake unevenly. The pans should be greased and floured for cookie dough high in moisture, greased for average rich dough, and left ungreased for dough rich in shortening.

Baking at the correct temperature for the correct length of time is very important. Most cookies are baked at temperatures between 300° F and 400° F. Cookies should be on the soft side when taken from the oven as the dough will bake a little more during the cooling period. Avoid overbaking cookies. Overbaked cookies become dry and lose their flavor rapidly.

PIES

A successful pie must have a tender crust. To ensure that the pie crust is tender the proper ingredients must be used and the dough must be carefully mixed.

If properly made, the standard pie crust has outstanding characteristics. In appearance, it will be golden brown with a rough surface that appears blistered. The texture will be flaky or mealy depending upon the method used to combine the ingredients. It should be tender enough to cut easily, but not so tender that it breaks or crumbles. The flavor should be delicate and pleasing.

INGREDIENTS OF PIE CRUST

Wheat Pastry Flour

The new type of flour used in the Armed Forces in the production of pies is wheat pastry flour. Tests have indicated that wheat pastry flour produces pie crusts superior in quality to those made from hard wheat flour.

Fats

Fats vary in their ability to produce flaky pastry.

Hydrogenated fats are 100 percent fat and make the most tender pastry.

Water

Water acts as a binder to the other ingredients. The amount of water required will vary with the kind and temperature of ingredients and the extent to which the fat and flour are blended. Dough that contains too much water will be tough and the baked crust will not be tender. Dough that contains too little water will not be sufficiently bound and the baked crust will be crumbly.

Salt

Salt has a desirable binding effect upon the dough. It develops and enhances the flavor of the other ingredients.

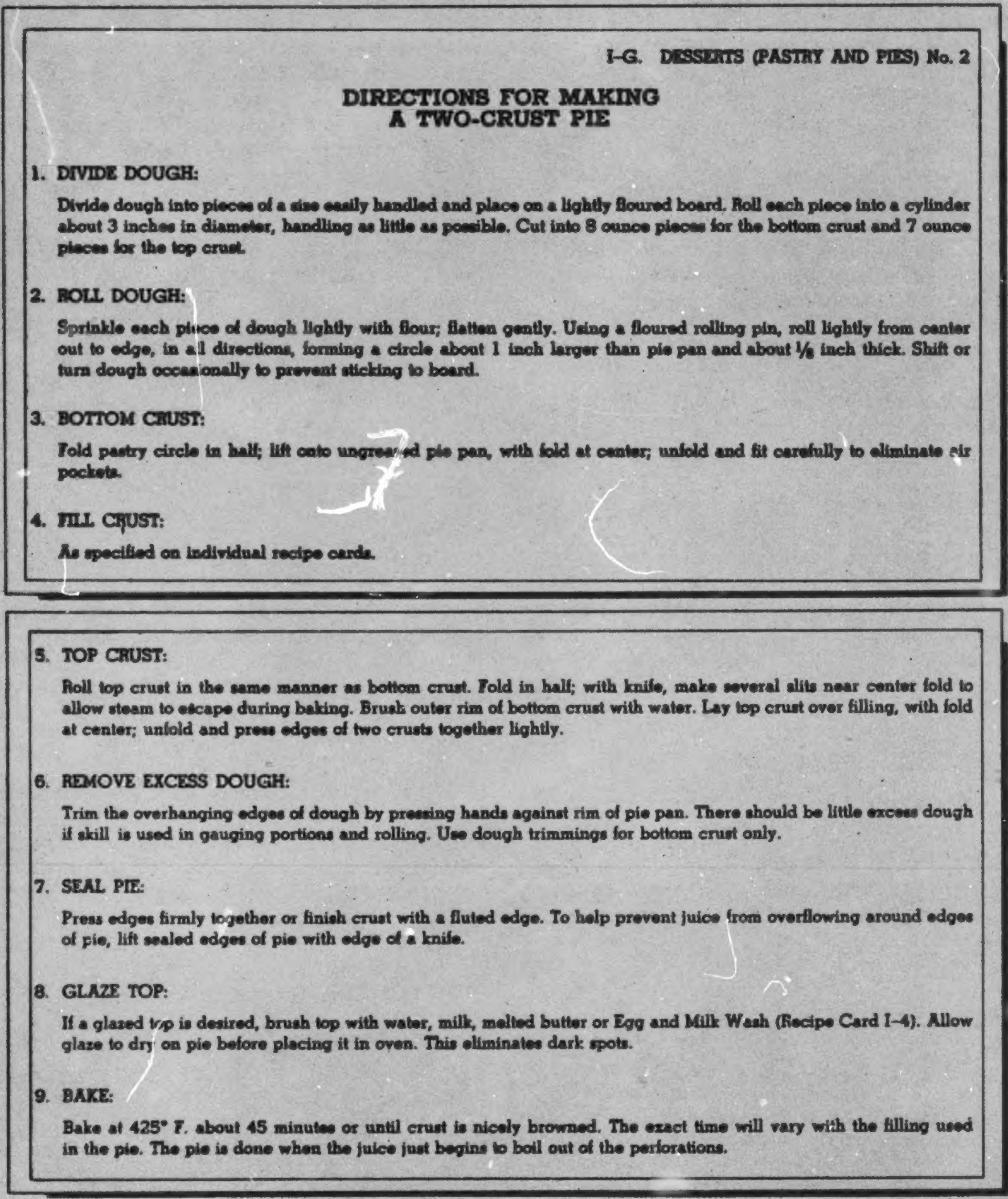
MIXING PIE CRUST

The fat should be mixed with the flour until the mixture resembles coarse corn meal with small particles of fat distributed evenly through the mixture. This may be done on the electric mixer with a pastry knife attachment or by mixing the ingredients lightly with the fingers. The extent to which the fat and flour are blended largely determines the quality of the crust. Overmixing at this stage will make a paste of the fat and flour, and it will be impossible to add the water required to bind the ingredients together. Excessive mixing after the water has been added will result in a tough crust.

When the dough has been mixed, it should be placed under refrigeration for at least one hour. This gives the flour time to hydrate properly and allows the dough to cool. Dough should be given the minimum amount of handling during makeup.

TYPES OF PIES

The shells for single-crust pies may be baked and then filled or filled and then baked depending on the pie recipe. For example, pumpkin filling is added to unbaked shells and then baked. Cream or chiffon fillings are poured into baked shells. No further cooking is required. The Armed Forces Recipe Service include guidance cards which outline directions for making two-crust (Figure 9-14) and a one-crust pie (Figure 9-15).



I-G. DESSERTS (PASTRY AND PIES) No. 2

DIRECTIONS FOR MAKING
A TWO-CRUST PIE

1. **DIVIDE DOUGH:**

   Divide dough into pieces of a size easily handled and place on a lightly floured board. Roll each piece into a cylinder about 3 inches in diameter, handling as little as possible. Cut into 8 ounce pieces for the bottom crust and 7 ounce pieces for the top crust.

2. **ROLL DOUGH:**

   Sprinkle each piece of dough lightly with flour; flatten gently. Using a floured rolling pin, roll lightly from center out to edge, in all directions, forming a circle about 1 inch larger than pie pan and about 1/8 inch thick. Shift or turn dough occasionally to prevent sticking to board.

3. **BOTTOM CRUST:**

   Fold pastry circle in half; lift onto ungreased pie pan, with fold at center; unfold and fit carefully to eliminate air pockets.

4. **FILL CRUST:**

   As specified on individual recipe cards.

5. **TOP CRUST:**

   Roll top crust in the same manner as bottom crust. Fold in half; with knife, make several slits near center fold to allow steam to escape during baking. Brush outer rim of bottom crust with water. Lay top crust over filling, with fold at center; unfold and press edges of two crusts together lightly.

6. **REMOVE EXCESS DOUGH:**

   Trim the overhanging edges of dough by pressing hands against rim of pie pan. There should be little excess dough if skill is used in gauging portions and rolling. Use dough trimmings for bottom crust only.

7. **SEAL PIE:**

   Press edges firmly together or finish crust with a fluted edge. To help prevent juice from overflowing around edges of pie, lift sealed edges of pie with edge of a knife.

8. **GLAZE TOP:**

   If a glazed top is desired, brush top with water, milk, melted butter or Egg and Milk Wash (Recipe Card I-4). Allow glaze to dry on pie before placing it in oven. This eliminates dark spots.

9. **BAKE:**

   Bake at 425° F. about 45 minutes or until crust is nicely browned. The exact time will vary with the filling used in the pie. The pie is done when the juice just begins to boil out of the perforations.

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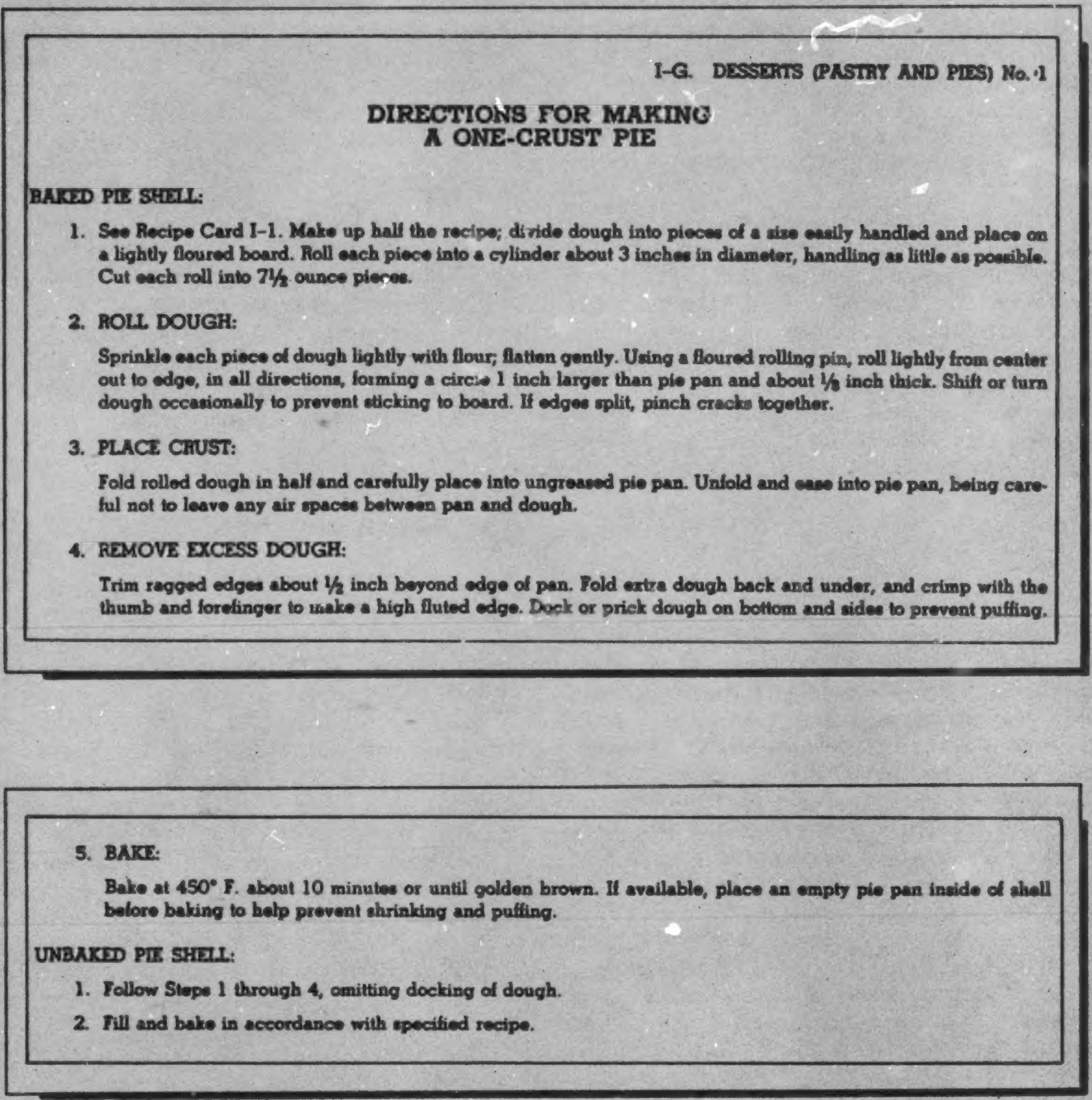
Figure 9-14.—Directions for two crust pie.



I-G. DESSERTS (PASTRY AND PIES) No. 1

DIRECTIONS FOR MAKING
A ONE-CRUST PIE

BAKED PIE SHELL:

1. See Recipe Card I-1. Make up half the recipe; divide dough into pieces of a size easily handled and place on a lightly floured board. Roll each piece into a cylinder about 3 inches in diameter, handling as little as possible. Cut each roll into 7½ ounce pieces.

2. ROLL DOUGH:

   Sprinkle each piece of dough lightly with flour; flatten gently. Using a floured rolling pin, roll lightly from center out to edge, in all directions, forming a circle 1 inch larger than pie pan and about ⅛ inch thick. Shift or turn dough occasionally to prevent sticking to board. If edges split, pinch cracks together.

3. PLACE CRUST:

   Fold rolled dough in half and carefully place into ungreased pie pan. Unfold and ease into pie pan, being careful not to leave any air spaces between pan and dough.

4. REMOVE EXCESS DOUGH:

   Trim ragged edges about ½ inch beyond edge of pan. Fold extra dough back and under, and crimp with the thumb and forefinger to make a high fluted edge. Dock or prick dough on bottom and sides to prevent puffing.

5. BAKE:

   Bake at 450° F. about 10 minutes or until golden brown. If available, place an empty pie pan inside of shell before baking to help prevent shrinking and puffing.

UNBAKED PIE SHELL:

1. Follow Steps 1 through 4, omitting docking of dough.
2. Fill and bake in accordance with specified recipe.

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Figure 9-15.—Directions for one crust pie.

TURNOVERS AND DUMPLINGS

Turnovers and dessert dumplings can be made from pie crust dough with fruit fillings. The Armed Forces Recipe guidance cards show how to cut pie pastry into turnover and dumpling shapes.

MERINGUE

Meringue will add to the attractiveness of a one-crust pie. Beat the meringue mixture until it is light, and spread it evenly over the top of the pie so that it touches the crust on all sides. Dip your knife in hot or boiling water before cutting a meringue pie to prevent the meringue from sticking to the knife.

BAKESHOP EQUIPMENT

Any discussion concerning baking is incomplete without a discussion of the equipment used. The electric mixer is discussed in this chapter. On smaller ships, you will use a machine similar to this to mix bread and cakes, as well as other foods. On larger ships, where there is space for a separate bakeshop, you will use a bread-dough mixer. Bread-dough mixers should not be confused with food-mixing machines.

BREAD-DOUGH MIXER

If you are to use the dough mixer wisely, without danger of overloading, it is important that you know the capacity of the particular machine in your shop. This capacity is expressed in barrels. When dough mixers were first made, flour was packed in barrels, and the size of the mixer was designated by the number of barrels of flour it could mix. Since one barrel of flour weighed 196 pounds, a one-barrel machine was designed to mix a dough containing 196 pounds of flour (a 360 pound dough).

Operation

Where speed is concerned, there are two types of dough mixers, no matter what their capacity. The low speed mixer, which is used aboard ship, operates at 26 rpm. The high speed mixer, used for shore activities, has a combination of 2 speeds and can be operated at low speed, 33 rpm, or high speed 65 rpm. The baker must determine the exact time needed to mix a dough properly in the particular mixer in his shop. It takes longer to mix the dough in a mixer which operates at a low speed than in one that operates at a higher speed.

Also, the amount of friction heat developed by the high speed mixer will be greater than that developed by the low speed mixer. Since this amount of heat will affect the development of the dough, it will be necessary for you to determine the exact temperature rise which will result from mixing on a particular machine. The temperature of the dough can be maintained at the desired level by controlling the temperature of the water used in mixing the ingredients.

Safety Precautions

Safety precautions.—There are certain safety precautions for operating mixing machines. First, of course, the machine should always be properly cleaned to protect the product. For your own protection, never reach inside the machine when it is running; don't get water on any of the electrical parts or the motor; and always be sure that the power is switched OFF before you clean the machine.

Care and Cleaning

The bread mixer should be cleaned after each use unless doughs are being mixed one after the other. In this case, the machine should be cleaned immediately after the last dough is out. You should be sure to remove all particles of dough and ingredients from all parts of the machine, particularly from the places that are not visible, such as the underside of the cover.

Like any other machine, the dough mixer requires proper lubrication. Although routine maintenance is performed by the engineering department, it is the responsibility of the baker to ensure that this service is performed as often as necessary to keep the mixer in good operating condition. The mixer is a rugged piece of machinery and is not likely to break down if it is kept lubricated and is not overloaded.

DOUGH TROUGH

A dough trough is the container in which dough is placed during the fermentation period. It is an oblong box-like trough of steel construction (Figure 9-16) equipped with 4 casters to permit easy movement in the bake shop area.

Dough troughs are of various lengths, and are designed to hold approximately 90 pounds of dough to a foot, or 50 pounds of flour to a

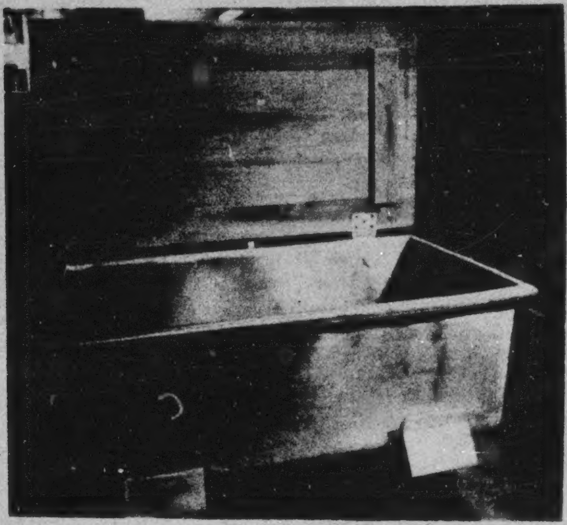

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Figure 9-16.—Dough trough.

foot. If the trough is too long for the amount of dough to be fermented properly, dam boards may be inserted so that the correct amount of space is available.

It is important that the dough trough be thoroughly cleaned after each use. After cleaning, rub the inside with oil to prevent it from rusting.

Aboard ship in rough seas the dough trough can be very dangerous. It should always be secured in some way to prevent it from shifting.

DOUGH PROOFERS

Dough proofers or fermentation rooms are used for conditioning dough and cooling baked bread. The air temperature and air moisture (humidity) in a dough proofer are kept at preset levels by automatic controls. Dough proofers are thermally insulated enclosures and vary in size from a small box with shelving to a room with space for many portable bread racks. The dough proofer is heated by steam coils or electric heating elements located inside the enclosure, or by self-contained air conditioning units connected to the proofer by air ducts. For shipboard use, steam heated dough proofers (Figure 9-17) are furnished in various sizes; the number and size of the proofers depend on the capacity of the bake ovens installed in the bakery on board ship.

Operation

The operation of all dough proofers is basically the same regardless of the size of the proofer. Air within a proofer should be kept at a preset temperature and moisture level. Dough proofers require at least one hour to attain the proper atmosphere; the unit should be started well in advance of anticipated use.

The time and temperature used to proof bread dough in the proofer should be the ones specified on the recipe card. Turn the steam valve on full and open the pet cock to provide the necessary amount of steam for humidity. Adjust the steam inlet valve to obtain the desired temperature. When the temperature and humidity are correct, place the pans of dough into the proofer and close the door.

Watch the time closely, and test the dough periodically by pressing the fingers into it. If the depression is filled by rising dough, fermentation is progressing properly. To reduce fermentation, cover the bread pans with cloths and reduce the

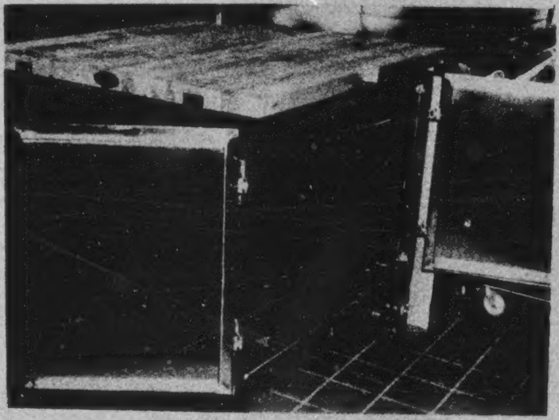

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Figure 9-17.—Dough proofer.

proofer temperature. At no time should there be more than 35 pounds of steam pressure allowed to pass through the steam coils of the proofer. Drain the condensation from the drip pan at regular intervals by opening the pet cock.

Care and Cleaning

Proofers should be maintained in a safe, sanitary, dustfree, rustfree, nonleaking, and economical operating condition. The enclosures and accessories should be kept free of flies, ants, cockroaches, mice, and rats.

At the end of each day, proofers should be swept clean. Shelves and racks should be removed and scrubbed with hot soapy water and rinsed with hot water (180° F). When practicable, the inside of the proofer should be scrubbed daily with hot soapy water, rinsed with hot water (180° F), and dried immediately.

BAKE OVENS

The Navy uses four types of bake ovens (Figure 9-18)—4, 6, 12, and 18. Types 4 and 6 are the older ovens having 4 and 6 compartments, respectively. In these ovens the heating elements are located at the bottom of each compartment and at the top of the upper compartment. Each heating element is controlled by a three-heat switch. Each baking compartment is designed with a maximum temperature of 550° F.

The type 12 (2 compartments) and type 18 (3 compartments) are the newer ovens. These ovens have the same available oven space as the type 4 and type 6, respectively. Each oven compartment is completely insulated from the others and each one is individually controlled by an adjustable thermostatic switch. The top and bottom heating elements in each compartment are individually controlled by three-heat switches.

Operation

To prepare the oven for use, preheat to the desired temperature with all switches on the "high" position, then turn to "low" or "medium" as desired. Make every effort to avoid excessive opening of the doors. Steam should not escape around the doors. Avoid direct air currents on ovens. Keep dampers as nearly closed as possible.

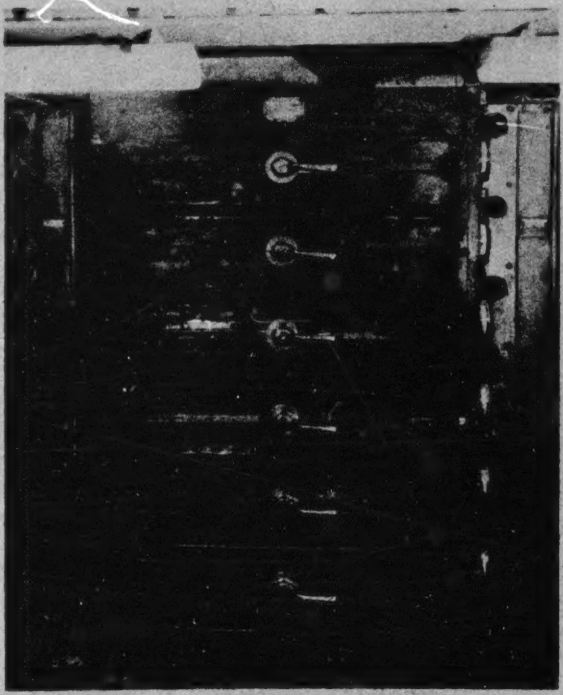

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Figure 9-18.—Bake ovens.

Load the decks evenly, distributing products uniformly over the deck area. Place products at least 3 inches from the door. Load the pans in rows, from the rear to the front of the oven, along the right wall. Follow this procedure until the oven is full. To unload the pans reverse the procedure. Unload the row on the right first. This procedure provides even baking for each pan.

Care and Cleaning

Keep the inside of the oven and decks scraped clean to avoid spotty heating, particularly around the doors and the edges of the oven. If dirt accumulates, the doors will not close tightly, and poor baking will result.

Cool the compartment by opening the vents, using the control rod at the front of the oven. DO NOT THROW WATER in the oven to cool the oven decks or to wash them. When you use a wet rag to swab or clean the decks, wring it out thoroughly before it is used.

SCALES

The set of scales is one of the most important pieces of equipment you have. A scale will assist you in conserving food and will produce a more desirable product. When a recipe calls for a certain amount of food, you should weigh out the amount. Don't guess. This will make it possible to keep an accurate record of the subsistence on hand, and will aid you in preparing the correct amount of food.

Care and Cleaning

The scale should be kept clean at all times; not only for the purpose of sanitation but because a small amount of food particles on the scale would cause your weight measures to be inaccurate. The scale should be wiped down with hot soapy water and rinsed with hot clear water. DO NOT immerse in water. The pan and balance weights may be washed in hot soapy water and rinsed in hot water (180° F) then allowed to air dry.

PANS

Pans for bread, rolls, cakes, and pies constitute a major investment in every bakery operation. The proper care and maintenance of these pans is essential if they are to remain in good condition.

Pans are made of tin plate (the most commonly used), aluminum, and aluminized steel.

Bread Pans

Bread pans are made of steel and coated with tin. New pans should be treated before they are used so that the tin will be harder and less porous. This will prevent the bread from sticking to the pans. The process of treating the new pans is known as BLUEING OR BURNING OUT pans.

To burn out pans, follow these steps:

1. Thoroughly clean the pans.
2. Place the pans in the oven and raise the temperature to 410° F.
3. Keep temperature of 410° F until the pan takes on a blue color.
4. Reduce the oven temperature to 275° F and leave the pans in the oven until they are cool enough to handle (warm).
5. Remove the pans from the oven and grease them lightly while they are still warm.
6. Place pans back in the oven and keep them warm for 1 hour in 275° F temperature.
7. Remove the pans from the oven.

NOTE that it is very important for you to control the temperature of the oven to prevent melting the tin coating on the pans. Remember also that sliding pans on the hot oven deck may cause the tin coating to rub off the bottom.

Bread pans which are being used daily should be lightly greased to prevent the loaves from sticking. Normally, sufficient fat is used in the dough so that it is not necessary to grease the bread pans after each use. The amount of grease used in a bread pan should be just enough to prevent the loaf from sticking to the pan.

All pans should be kept clean and dry to avoid the formation of rust.

Pie Pans

Pie pans are round in shape–the sizes are designated by the width (diameter) of the pan in inches. Observe the following rules in order to keep pie pans in good condition and to ensure a longer life.

1. Clean pans after each use, and dry thoroughly in the oven with temperature set at 380° F or less.

2. Avoid cutting or scratching the pan when you cut the pies.

Muffin Tins

A unit in a muffin tin is approximately 1 1/2 inches in diameter, but the units vary in depth. The average pan has 12 units. The importance of keeping these pans well greased and clean cannot be overemphasized. If the pans are dirty, it will affect the finished product.

Avoid letting rancid grease accumulate in the crevices and corners of these pans. A good procedure to follow in caring for the pans is as follows:

1. Grease the pans with a plastic grease before each use.
2. Flour the pans after they have been greased to prevent the cakes or muffins from sticking to the pans. Paper liners are now available for muffin tins. Your supply officer can order them for you.
3. Clean and dry pans after each use. Do not grease them.
4. Do not bang and slam the pans. This distorts them and causes excessive strain on the strappings causing premature deterioration. Dented and bent pans will cause the baked products to be malformed and misshapen.

OTHER BAKE SHOP EQUIPMENT

Dough Thermometer

A dough thermometer is an essential instrument in any shop that is producing bread. It is used for determining the temperature of the flour and water used in the bread dough; and, after the dough is mixed, the temperature of the dough. In order for the yeast to function uniformly and at a proper speed, the dough must be at the correct temperature. The temperature of the ingredients added to the dough and that of the room in which it is mixed, as well as the heat generated by the mixing process, will affect the final temperature. Without a thermometer, you will not be able to determine any of these temperatures accurately. The highest reading of the dough thermometer is 120° F. Keep it out of extremely hot water.

Bread Racks

Bread racks should be used for cooling or for proofing bread. The rack may be filled with pans of molded (shaped) loaves of bread and put in the proof box for the time required for proofing. After the bread has been baked, the bread should be placed on the trays from the top down and about 1 inch apart to cool.

The bread racks should be washed at frequent intervals to prevent dirt, crumbs, and foreign matter from falling on the bread.

Work Bench

The newer work benches are made of stainless steel. Some of the older ones, which are made of wood, may still be in use but are being replaced by the stainless steel type. The work bench is used primarily for the makeup of handmade baked products. It should be permanently secured to avoid shifting to a position where it may cause an accident while the ship is underway. It should be scrubbed after each use.

Cutting Board

The cutting board is made of very hard rubber and may be used for cutting any type of food item. The use of this cutting board will protect your knife edge. The cutting board should be cleaned after each use.

CHAPTER 10

FOOD SERVICE

Any meal is improved by good service, and the best meal in the world can be ruined by the failure to serve it properly. It is especially important to make each meal as attractive as possible when you have to feed the same group of personnel for three meals a day, every day of the year. Fortunately, many of the procedures that promote sanitary and efficient service also help to make the food attractive.

Sanitary and efficient food service begins in the galley where the food is prepared. Food should look attractive and smell good. It should be brought to the serving line in appropriate containers and be served in attractive portions by properly trained food service personnel who are neat and clean. The serving lines and all the serving operations should be so arranged that foods are served at the proper temperature.

Food should always look attractive, both on the serving line and as an individual portion. This does not justify spending an excessive amount of time or materials on elaborate decorations. Preparation of the meal does require careful planning as to the combination and garnishing of food, the selection of the serving containers, and the manner in which the meal is presented.

PREPARATION IN THE DINING AREA

A well arranged serving line operates smoothly and rapidly. Each customer should be able to select the food that is desired and should be able to get the food to the table while it is still at the proper eating temperature. Accomplishing these objectives requires planning and supervision on the part of the senior MS.

DINNERWARE

Dinnerware should be washed after each meal and made ready for the next meal. Before storing the clean utensils for the next meal, the cabinet should be inspected for cleanliness. Trays and bowls must be located at the head of the serving line; silverware may be placed at the head of the line but it is recommended that it be placed at the end of the line. Cups and glasses should be located near the beverage dispensers. All items of dinnerware should be inspected to ensure that they are spotlessly clean and not chipped, cracked or bent. An inventory should be taken once a week to be sure that there is a sufficient amount of dinnerware to last the entire serving period.

POSTING THE MENU

Service is speeded up when a person knows what foods are being served before he reaches the serving line. It is a good practice to post the current menu, in full view, near the beginning of the serving line. It may be in the form of a typed menu. Another form is a menu board. This is a board with grooves that will hold cards bearing the names of the various dishes for the meal. Any method is acceptable that gives the customers time to decide which foods they desire before they reach the serving line. It is strongly recommended that a suitable means of expressing calorie content for each item in the meal be publicized for the benefit of dieters and weight watchers.

SERVING TIME

The commanding officer establishes the hours for serving the meal. The time published must be strictly adhered to; the day's work schedule in the galley must be organized to conform to the established hours for serving meals. The dining area and serving personnel should be prepared to begin serving on time. Advance planning will ensure prompt and efficient service.

PREPARATION OF THE SERVING LINE

The serving area, which includes the salad bar, steamtable, bread and pastry counter, drink/beverage dispensers must be cleaned after each meal. This area must be checked again before each meal to ensure that it is clean and sanitary.

The steamtable requires advance preparation. Water has to be placed in the steamtable and the steam turned on so that the water will be at a temperature of 180° to 200° F when food is placed on the table. This temperature must be maintained at all times while food is on the serving line. Temperatures below this range will not keep food hot enough and higher temperatures will cause overcooking and ultimately ruin both the taste and the appearance of the food.

Food should be placed on the steamtable just prior to serving time. The quantities of food placed on the serving table should be small and should be replenished frequently during the serving period. It will be necessary to use progressive cooking techniques in order to meet these requirements.

Because heat and juices are lost so quickly from sliced meats, roasts are more palatable when carved on the serving line as the customers come through; consequently, most of the natural juices and the heat will be retained. Meat carving is covered later in this chapter.

Keeping cold foods, such as salads, properly chilled also requires advance planning and preparation. Salads contribute a great deal to the meal; they add variety, make meals more attractive and help balance the meal. Because self-service salad bars are used increasingly in Navy dining facilities, this method of serving salads is covered in another section in this chapter.

Garnishes

Though garnishing is just one step in presenting food attractively, it is a very important one. A garnish is described as an ornament or a decoration. Garnishes are planned to complement the flavor and the texture of the dish as well as add "eye appeal." Any garnish used should be edible and should be such an integral part of the food that it will not be left on the plate.

If you were to plan a garnish for every food, it would be quite a job, but fortunately not all foods need this help. For example, a meal consisting of pot roast of beef, mashed potatoes, brown gravy, buttered peas, celery sticks and sweet pickles, hot rolls and butter, and blueberry pie needs to have nothing added in the way of a garnish to make it attractive. The natural colors, textures, and flavors combined in this meal provide enough variety to make the meal inviting to the eye and tempting to the taste.

Many of the Armed Forces Recipe Service recipes have a "built in" garnish. Good examples of this are: beef stew, tossed vegetable salads, browned casseroles, and desserts such as cakes iced with frostings that complement the color and flavor of the cake.

Always refer to the food preparation worksheet for information regarding the garnishing of various foods on the menu.

Listed below are some practical guides to effective food garnishing:

- Use restraint in garnishing. Keep a picture of the whole meal in mind. Too many garnished dishes in one meal will spoil the effect. Select a suitable garnish, if one is needed, and use it sparingly.

- Vary food garnishes. Do not let garnishes become monotonous. Use a section of orange or a slice of peach on top of a pudding occasionally; not always a maraschino cherry.

- Plan garnishes ahead of time and show the serving personnel how garnished foods should be served.

- Plan simple garnishes. Do not sacrifice timely preparation for the sake of garnishing.

- Take advantage of the natural food color contrasts in combining foods. Do not rely on the addition of food coloring to the food to supply color contrast.

Containers

To ensure that an appetizing appearance is maintained, use shallow steamtable inserts for serving vegetables such as mashed potatoes, broccoli, and cauliflower; and for such meat items as breaded veal cutlets or baked pork chops. If french-fried eggplant is stacked in a deep insert, the first few customers served will receive acceptable portions; everyone else will be served a soggy portion. If the eggplant is spread loosely in a shallow insert, you will know that all of the customers served will receive an appetizing, palatable portion.

Desserts and Pastries

Desserts should be set in tempting arrangement. Serve cleanly cut slices of pie, and evenly sliced squares of cakes and cookie bars. Puddings and other similar desserts should be spooned neatly in bowls or dishes. Most desserts should be preportioned and replenished frequently to the serving line. If a special occasion cake is prepared, set the unsliced cake on the serving line so that the decorated cake can be seen before it is sliced. Slice and preportion the cake on plates as the customers approach the dessert bar. One of two whole baked pies can be set on the serving line along with sliced portions of the pie.

Highly perishable desserts such as cream puddings and pies, custards, fruit gelatin desserts, cream puffs, and eclairs must be served chilled. Place them on refrigerated units or on trays over ice. Keep ice cream frozen. Whipped toppings should be served cold. Serve toppings from a small container and replenish frequently.

Locate dessert dishes for ice cream next to the ice-cream freezer. If soft ice cream is served, place paper cones or sugar cones near the machine. Sundae toppings should be located near the ice cream. If pie a la mode is the featured dessert, add scoops of ice cream just as the dining patrons select the pie. Ice-cream pies should remain frozen. Place only a few slices of ice-cream pie on the serving line, and replenish as required.

Beverages

Cold drinks and juices should not be dispensed by ladle from an insert; milk dispensers or other appropriate dispensers should be used. Do not serve juices from their original container unless the cans are the individual size. Juices may be dispensed from beverage coolers or pitchers. Preportioned juices in paper cups speed service and aid in portion control and can be replenished as required.

Miscellaneous

Butter patties should be served from a dispenser. If a dispenser is not available, the ready-to-serve patties may be placed on a tray and set over a container of ice on the serving line. Unwrapped patties should be placed on paper ships and arranged on a tray set over ice.

Dry cereal should also be served from a dispenser. It should never be served directly from the packing carton. If a dispenser is not available, the individual packages should be arranged on a tray on the serving line.

Bread will remain fresher if served from dispensers. Otherwise, bread should be opened as needed, removed from the wrapper, and placed in a shallow container on the serving line. Galley-baked bread should be sliced and replenished when needed during the meal. Chilled bread should be heated prior to meal service. To give a fresh-baked quality to breakfast pastries, coffeecakes, sweet rolls, and so forth, heat them in an oven (250° F) for 8 to 10 minutes before serving.

THE FOOD SERVICE PERSONNEL

The personnel who serve the food should be neatly groomed; their appearance will add to or detract from the overall appearance of the serving line. Every MS assigned to the serving line should:

- Shave daily (men). If beard is worn, wear a protective face mask. See OPNAVINST 6240.6.

- Wash hands before handling or serving food.

- Wear a clean uniform and food service hat or hairnet. See NAVMED P-5010-1. A daily inspection should be held of all food service personnel by the food service officer or his designated assistants.

SERVING THE FOOD

SERVING TECHNIQUES

As a petty officer or apprentice, you may be placed in charge of the serving line. When this is the case, you should instruct personnel as to the proper techniques for placing items on the serving line, for serving each item, and for placing the items on the plate or tray. Correct serving techniques are very important!

Soups, Chowders, and Similar Foods

Soups and chowders are placed in the steamtable in deep well inserts; use the 8-ounce ladle and serve as follows. Key serving points follow each step.

1. Pick up the soup ladle.

   Hold the ladle about half way down the handle, grasping it between the thumb and forefinger. This firm hold makes it easier to balance a full ladle.
2. Stir the soup or chowder.

   Stirring distributes the solid particles and the temperature evenly.
3. Dip from the bottom.

   Solids settle to the bottom, and the soup or chowder at the bottom of the insert is the hottest. Dip while solid particles are in motion.
4. Raise the ladle above the level of the soup bowl.

   The customer in line has extended the tray and soup bowl toward you. As you raise the ladle, the liquid it contains will settle so that it is easier to pour, and it will not spill over the sides.
5. Tip the ladle slightly and pour slowly. Direct the pouring into the center of the soup bowl.

Whenever you serve stew, chili con carne, or any similar item, you should use the same technique—stir to distribute the solid particles and the liquid evenly—then dip from the bottom. This is the ONLY TIME you should stir these items. When there is a lull and you are waiting for the next person to come through the line, do not stand and idly stir the vegetables. The less they are stirred, the better they will maintain their appetizing appearance.

Solid Foods

As you serve items that are in shallow inserts, like macaroni and cheese, baked lasagna or lyonnaise potatoes, serve the food from the back of the pan towards the front of the pan in an orderly system across the pan. A uniform way of serving helps maintain the fresh appearance of the food and promotes eye appeal.

SERVING UTENSILS

Serving utensils and serving techniques go hand-in-hand. You can't serve properly without the right utensils. Using the appropriate serving tool for each dish has several advantages. It accomplishes the following:

- Simplifies food service

- Exercises portion control

- Reduces food waste

- Maintains a more appetizing appearance of foods in pans on the serving line.

Use a food turner for lifting steak, scrambled eggs, or other similar items. For mashed potatoes or items of similar consistency, use a serving spoon or a scoop. Use a basting spoon or other shallow spoon to dip sauce or gravy from a shallow pan, but use a ladle to serve food from a deep well. Some foods, such as peas and cabbage, should be served with a perforated spoon, so that the liquid drains back into the serving pan. Serving forks should be used for serving some meats. Fried chicken, asparagus, broccoli, and corn on the cob should be handled with tongs.

PORTIONS

The MS assigned to supervise the serving line has two responsibilities regarding portion control. One is to see that servings are equitable, and the other is to ensure that the amount served is not more than the individual requests.

The portion size of some items can be regulated on the serving line through the use of standard ladles and spoons. When you serve meat, guesswork on correct portion sizes can be eliminated by using scales to check one or two slices before you cut the entire batch. Some meat items are precut in individual serving portions; for example grill and Swiss steaks, pork slices (chops) and veal slices.

REPLENISHMENT

As the petty officer in charge of the line, you must keep a close watch on the food containers. You have the responsibility of keeping food on the serving line throughout the entire meal. Whenever you see that you have approximately 15 portions left and that there are more than that number of customers in the line, request another batch of food. Avoid running out! That only creates a delay in the serving line and confusion in the galley.

Empty containers should be kept off the deck and serving tables. They should be sent back to the galley.

CARVING

Carving plays an important role in serving meat in an appetizing manner. Carving affects the appearance and texture of the meat and the portion size can be controlled by carving. Therefore, it is essential that the MS develop skill in carving.

The direction of meat grain determines how the meat is to be sliced. Most meats should be cut across the gain. Cross-grain slicing shortens the muscle fibers and produces a more tender slice of meat.

Carving Roast Meats

Roast meats should be allowed to rest about 20 minutes after they have been removed from the oven before they are carved. This period allows the meat to "firm up". It also allows the meat to reabsorb some of the juices lost during the roasting process. The meat becomes firm and can be sliced with greater ease in equal slices. Slicing should be done on a hard rubber cutting board so that the cutting edge of the knife is protected. The carving board should be placed in a sheet pan to catch the drippings while the meat is being sliced. Remove any string or netting which may have been used to hold the meat together while it was cooking. With a sharp carving knife (long, thin-bladed knife) and a two-tined fork in hand, carve the roast as follows:

1. Cut one slice across the top of the roast so that the carver can determine the direction of the grain of the roast.

2. Hold the roast in place by pressing the fork firmly into the top of the roast.

3. Carve across the grain of the meat from right to left for a right-handed person and from left to right for a left-handed person. The carved portions can then be easily lifted to the plate or tray.

4. Cut thin, even slices.

Because it is important to carve a roast into uniform pieces, it is suggested that a few servings be sliced in the galley and weighed. This will enable you to serve uniform slices and adequate portions. For detailed information on carving procedures for roasted turkey, refer to Chapter 7.

SALAD BAR

Most salad bars are self-service and refrigerated. The salad bar is usually located in an accessible area at the beginning of the line, space permitting. This would mean that the hot foods would be picked up last. In some cases, the salad bar is located in the dining area and is accessible from both sides.

ARRANGEMENT OF SALAD ITEMS

Coordinate the salad bar menus with the space available. Overcrowding items on the salad bar detracts from the overall appearance, hinders easy self-serivce, slows down the service, and generates confusion. Careful attention should be given to the arrangement of the salad items to eliminate the customer having to reach over one container of food to get to another. Particles of food are often dropped from one container to another, resulting in an unappetizing, unsatisfactory display of food.

REFRIGERATION OF SALAD INGREDIENTS

For proper refrigeration of ingredients, place all salad bar items in pans or in trays on a bed of ice, or on a mechanically refrigerated salad bar unit. Proper drainage is essential if salad items are set in ice.

When the use of ice is not possible, and the salad bar is not refrigerated, the bar should be large enough to accommodate shallow pans or trays of salad items which are taken directly from the refrigerated space. Because of the high room temperature of most dining areas, easily contaminated food (salad mixtures containing meat, fish, poultry, eggs, cooked salad dressing, and mayonnaise) should be placed on the salad bar in small quantities and replenished as needed. Commercially prepared salad dressings in individual portions and opened bottled salad dressing should be refrigerated.

SERVING UTENSILS FOR SALADS

An adequate number and the proper kinds of serving utensils for the salad bar will promote good sanitary practices and keep the salad bar in order during self-service. The most useful utensils and the food with which they can be used are as follows:

TONGS—for relishes and green salads—such as carrot sticks, celery, pickles, olives, lettuce and other salad greens.

PERFORATED SPOONS—for salads mixed with thin dressings—such as cole slaw, fruit salad, and cucumber and onion salad.

BASTING SPOONS OR SCOOPS—for compact foods and salad mixtures—such as potato, ham, fish, cottage cheese, and macaroni salads.

SMALL LADLES—for thick and thin salad dressings.

CHECKING THE DINING AREA

Sanitary practices that should be observed in the preparation and in the serving of the food have been discussed. It is equally important to maintain the dining area in an orderly and sanitary manner during the meal and to clean the dining area thoroughly when the serving is completed.

The tabletops should always be kept scrupulously clean. They must be scrubbed and sanitized after each meal with hot soapy water, and rinsed with clear water to which a germicide solution has been added. Germicide and fungicide solutions are standard stock items and may be ordered through supply channels. The sanitizing solution should be changed as frequently as necessary to ensure a clean solution.

After each meal the salt, pepper, and condiment containers should be thoroughly wiped with a mild detergent solution then refilled. Once each week the salt and pepper shakers should be emptied, prewashed, and put through the dishwashing machine. These containers should be arranged in the same order on all tables. The method recommended is to place the taller containers in the center and arrange the others around them in graduated order.

Food service personnel assigned in the dining area should be instructed to check the dining area continuously during the serving period. Spilled food on the deck constitutes a safety hazard and should be cleaned up immediately.

Thus far, our discussions have centered primarily on the various aspects of preparing and serving the food in the enlisted dining areas. While this is an important part of your job, it is only one part. You have other duties, including maintaining a clean, sanitary dining area, setting the tables for regular and formal meals, taking into consideration the appropriate seating arrangements for officers and their guests, and supervising food service personnel.

THE WARDROOM

The wardroom is usually a multipurpose area. It is the officers' dining area and lounge.

It is an area where officers gather for social functions, for entertainment, to conduct business, and to hold conferences.

WARDROOM DUTIES

As we stressed earlier in this chapter, it takes team work to have an efficient operation. This is also true in the wardroom. Team work starts with the MS who prepares the food. The MS works with the pantryman who arranges the food in serving containers. The pantryman works with the apprentice MS and food service personnel who actually serve the food. If you work together as a team and take pride in your job, you will generate a feeling of pride and professionalism and give your patrons excellent service.

Cleanliness

Apart from the strictly basic reasons for maintaining cleanliness which were discussed mainly in Chapter 3, having a clean, orderly wardroom gives added pleasure and enjoyment to the members who use it. Keeping the wardroom clean is a continuous endeavor for it is a job that is never finished. It begins before reveille when the clutter left by watchstanders and other late users is cleaned up and the wardroom is made ready for breakfast; and it continues until the wardroom watch cleans and straightens the room before securing it for the night.

Officers going on and coming off watch and those returning to the ship after the watch has secured generally make use of the wardroom for a cup of coffee or a snack. Consequently, there will be some dirty dishes and ashtrays to be cleaned the first thing in the morning. Any other cleaning necessary to the maintenance of a fresh, orderly appearance, should be done at this time.

Immediately after breakfast, and after each meal, the wardroom, galley, and pantry should be cleaned. A cleaning bill, outlining what is to be cleaned, should be posted in a conspicuous area by the MS in charge of the officers' dining facility. This would simplify the daily and weekly cleaning schedule.

Many wardrooms are air conditioned; consequently, it is possible to maintain the desired temperature in either cold or hot weather. When the air conditioning has been installed in older ships, the provisions for admitting fresh air and exhausting stale air is often inadequate, resulting in a stale odor and an oppressive atmosphere that is particularly noticeable in the morning. When this occurs, the wardoom should be opened up and aired out the first thing in the morning. The air conditioning equipment will then have sufficient time to bring the temperature back down to a comfortable level before breakfast is served.

The piping, filters, heating registers, and both the fresh air and exhaust vents of the ventilation system must be cleaned periodically. This is necessary, not only for adequate circulation and proper ventilation, but it also helps eliminate fire hazards. The engineering department will provide technical assistance in regard to maintenance.

STYLES AND TYPES OF TABLE SERVICE

There are many variations of table service used to serve meals. Specific serving procedures for each method will not be discussed. Rather, we will discuss the two basic classes of table service used in the officers' dining facility-formal and informal.

Formal Meal Service

Formal meal service known as "French Service" is the most elaborate form of table service. It follows the traditional rules. A white tablecloth, white candles, a centerpiece, and the proper placement of all covers is a must. This type of service requires a great deal of advanced planning, more detailed preparation and a sufficient number of personnel. This method of service, discussed in more detail later in this chapter, is provided for commanding officers' and flag officers' dining facilities. Formal service is provided in the wardroom dining facility ONLY for a very formal dinner or for special occasions.

A semiformal type of service is a modification of the formal meal service and is used daily in the commanding officer's and flag officer's dining facility when there are no guests. Fewer dishes and silver are required for semiformal service and the use of a centerpiece is optional. The senior MS assigned to the commading officer's and/or flag officer's dining facility should consult the treasurer for approval to use this type of service.

Informal Meal Service

Informal meal service is not as elegant as the formal meal service. However, the quality of the food and the service should be equally as good as for the formal dinner. There are several types of informal service which are used daily in the wardroom dining facility. They are: family style, American style, cafeteria style, buffet style and ala carte style for breakfast and brunch. The senior MS should always consult the treasurer for approval as to the method of service or modification to the service used.

Family Style

For this type of service the food is attractively arranged in the pantry or galley in the proper serving dishes with serving utensils and placed on the table. Each officer serves himself and passes the serving dishes around the table. Dessert items which are to be served later can be brought in from the wardroom and placed on the sideboard. The serving dishes are replenished as necessary.

American Style

This type of service is used in restaurants. The individual plates are prepared in the pantry or galley and then placed before the diners. This is the form of meal service usually provided for the patrons of the officers' dining facilities ashore and for medium size ships afloat. This type of service is combined with the ala carte style service which is provided for breakfast.

Cafeteria Style

This type of service is used in most dining facilities ashore and aboard some larger ships. The entire meal may be cafeteria style, or it may be a combination of cafeteria and buffet style. This type of service does provide some distinct advantages, namely:

- Fewer serving personnel are required.
- Greater numbers can be served in far less time.
- Officers can eat at any time during the meal hour.
- The diner can see all foods that are offered and make his selection.

The diner does not normally serve himself. Rather, he selects the items he wants. Usually, salads, desserts, and some side dishes already portioned in appropriate dishes, and he has only to take them from the serving line. The main course, vegetables and meat, and portioned onto a plate by an attendant as he selects them.

Buffet Service

Buffet service may be used for both formal and informal occasions. This type of service is generally used when either space or serving personnel are limited. The food is attractively arranged on a sideboard or serving table, and the officers and guests serve themselves. It is customary to place silverware and other necessary dishes on the dining table so that the diners do not have to carry them. When seating at the dining table is not adequate, or for a "stand up" buffet, silverware and napkins are placed on the buffet table. All foods may be arranged on the buffet, or some items may be taken from the buffet and served after the guests are seated.

Serving responsibilities for buffet service are fewer, but they are no less important. The buffet and dining table should be watched constantly so that items may be replenished before they run out and soiled dishes may be removed immediately after use. After the diners are seated, the buffet may require some straightening up so that it remains attractive for late comers or anyone desiring seconds.

When everyone has finished the main course, the main course foods should be removed from the buffet table, and the dishes and used silverware should be removed from the table. If the dessert is to be served from the buffet table, the dessert and the appropriate serving dishes should be arranged as soon as the main course foods are removed; otherwise, the dessert should be served at the table.

Ala Carte Style

This type of service is usually provided at breakfast and brunch meals. The food listed on the breakfast menu is prepared as ordered—such as eggs sunny side up. The rest of the food ordered is then placed on the plates and served to the officers by the wardroom attendant "American style."

FORMAL AND INFORMAL TABLESETTING

A properly set table provides a pleasant background for a meal. An attractively set dining table contributes to the enjoyment of the meal. There is basically little difference between a formal and an informal tablesetting.

Informal Tablesetting

- Remove the table cover, fold it, and place it in its designated location.

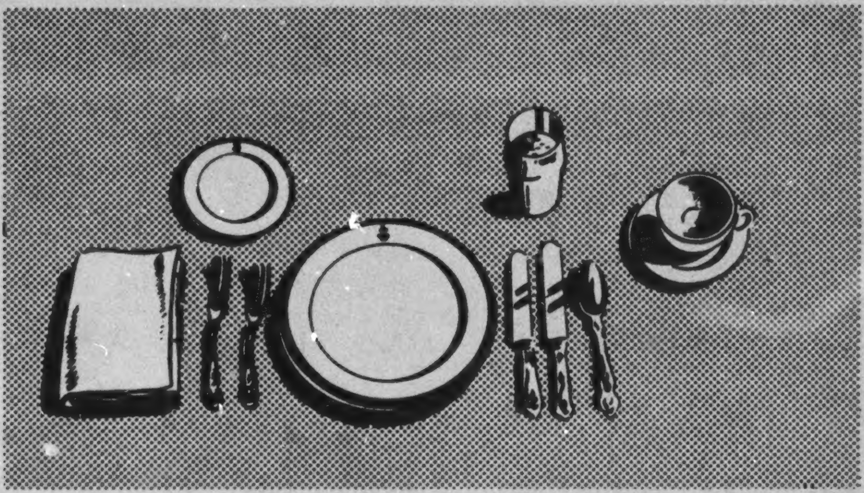
- Place the silence pad on the table. The silence pad is usually made from felt or other heavy fabric. Its purpose is to prevent noise as tableware is placed on the table, to protect the table top, and to improve the appearance of the tablecloth. It should drop approximately three inches over the edge of the table and be tightly fitted over the table top.

- Spread the tablecloth over the table so that the lengthwise crease runs down the center of the table. Smooth the cloth and be sure that it hangs evenly below all edges of the table. A drop of approximately eight inches is preferable. A pleasing effect can be obtained by having the tablecloth pressed so that it presents three creases. This is done by first pressing the cloth with one lengthwise fold to make a crease in the center. Then the cloth is opened and each side folded in to the center crease and pressed. When the cloth is placed on the table, it will have three creases running the length of the table.

- After it is used, the cloth should be refolded on the pressed creases and rolled or lightly folded so as to retain the creases.

The Cover—The dishes, silver, glasses, and napkin placed in front of one person are called a COVER (Figure 10-1). The number of dishes and pieces of silver necessary for a cover depend upon the occasion and the menu. Everyday meals require fewer dishes and silver than formal meals. Always check the menu before setting the table.

Dinner or Service Plate—The dinner or service plate is placed directly in front of each chair. The ideal spacing of plates for family style or formal occasions is 24 inches from plate center to plate center. This is close enough to permit easy conversation and provides enough room for each individual diner. The dinner plate is omitted on the table when American, Cafeteria, buffet style, or ala carte style is used.



85.18

Figure 10-1.—Cover for an informal meal.

Silverware—Silverware is placed about one inch from the edge of the table and close to the plate. It is placed according to the order in which it will be used—the outermost pieces being used first. Knives are placed next to the plate on the right side with the cutting edge toward the plate. Spoons are placed to the right of the knives with the bowl up. Forks, except oyster forks, are placed on the left side of the plate. When the oyster fork is used, it goes to the right of the spoon. Usually, not more than six pieces of silverware are placed at a cover. During a formal dinner, when additional silver is required, it is brought in with the course requiring its use.

Bread and Butter Plate—The bread and butter plate, when used, is placed to the left of the dinner plate, above the points of the forks.

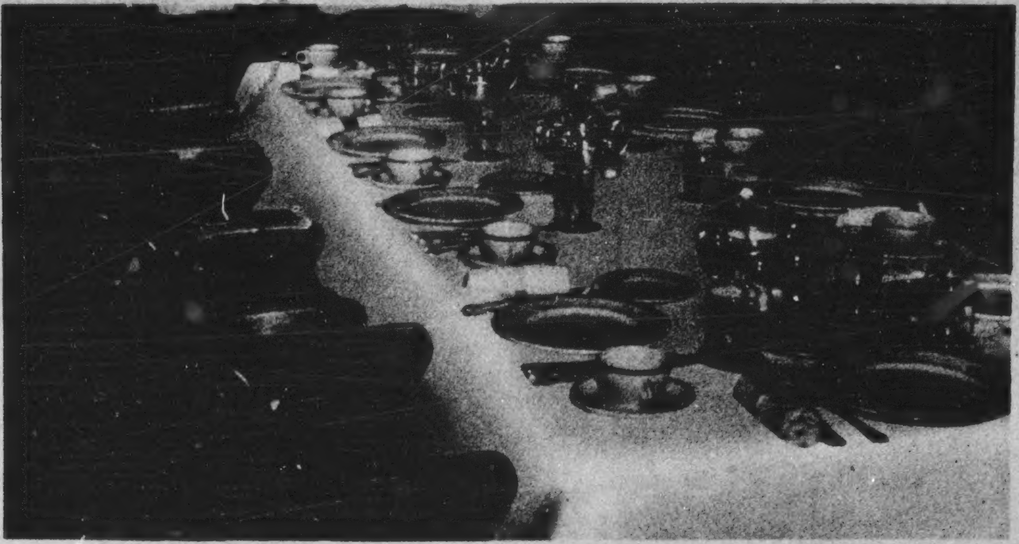
Water Glass—The water glass is placed to the right of the dinner plate, above the points of the knives. For purposes of safety, ease of serving, and to avoid an accidental spill, water glasses are normally filled in the pantry and placed on the table just before the meal starts.

Coffee Cup—The coffee cup is placed on the table to the right of the water glass.

Napkin—The napkin, which may be either cloth or paper, is placed either to the left of the forks or on the dinner plate.

After all covers are set, check the table once again to see that all covers are alike and that nothing was omitted. Be certain that spoons are laid with bowls up and that the cutting edges of knives are turned toward the plate. Place the chairs so that the front edge of the seats are just against or under the drop of the tablecloth. Figure 10-2 shows a table properly set up for an informal meal.

Table Decorations—A centerpiece adds much to the attractive appearance of any table. A small amount will usually suffice for informal table settings. The purpose of an ornament is to add eye appeal to a table. At formal dinners the table ornaments are much more elaborate, such as candelabrum with lighted candles, flowers, small lamps, or sometimes a combination of these or others are used. The centerpiece or bouquet should not be so tall that persons at the table cannot see those on the opposite side of the table, and the flames of candles should be above eye level.



85.19

Figure 10-2.–Wardroom table set up for an informal meal.

Informal Meal Service

All meals are served either by family, cafeteria, American, buffet, ala carte service or by a combination of these, as discussed earlier.

The President or the officer in front of whom the buck is placed (American Service) is served first; then the service proceeds counterclockwise around the table. The buck is any object chosen by the members which is used to indicate the officer who is to be served first. The buck is placed in front of each officer in rotation (clockwise or counterclockwise) and that officer is served first. An officer does not lose his or her turn (being served first) because of guests being present–it is merely postponed. The buck is placed before that officer at the next meal.

When foods are placed on the table family style, make sure that each food is in the proper serving dish and that the dishes are neatly arranged on the table. Wipe spilled foods from the edges and the bottom of the serving dishes to avoid soiling the tablecloth.

Foods, including soups, are served from the left of the person being served. Beverages are served from the right.

Soup is normally ladled into the soup plates in the pantry and served rather than offered to the officer at the table.

The rule of thumb to follow during formal and informal service is to serve the foods from the left and remove from the right, with the exception of beverages.

To avoid overcrowding the table during family style service, refill the water glasses as necessary instead of placing a water pitcher on the table for officers to help themselves. In other types of service such as American or cafeteria, a water pitcher may be placed on the table for those who desire refills.

Coffee should be available at all times and served piping hot. Be careful when serving coffee and other hot beverages especially aboard ship when the ship is underway. An accidental spill can cause a painful burn.

When an officer has finished a course, remove the used dishes. Do not stack the dishes in front of the officer. With the right hand, remove the plate and silverware used during the course. When more than one plate is being removed, hold the first in the left hand and place the others on top of it.

When desserts are not picked up from the line, they should be served. Place a pitcher of hot coffee on the table for those desiring seconds and place ashtrays within the officers' reach.

When guests are present, some changes to the seating and serving order are necessary. Although some of these changes were mentioned earlier, bringing them together at this point will help you to recognize what routines must be changed.

The buck is not used when guests are aboard. A guest of the ship or the guest of honor, sits to the right of the president and is always served first. Other guests usually sit to the right of their host officer. When no guest of honor is present and more than one officer has guests, the guest of the senior host officer is served first. In all cases, after serving the guest of honor, the serving continues from that point counterclockwise around the table. You do not skip around in order to serve all guests first.

Formal Tablesetting and Service

The service required for formal meals is more elaborate than for informal meals. However, the table setting is basically the same as for informal meals. Usually four or five courses are served, but as few as three or as many as seven may be served. All food from each course is served to all diners in prompt succession. For a formal dinner everything is served; nothing is set on the table except the salt and pepper shakers. Condiments and other seasonings are served at the appropriate time. A table setting for a formal dinner is shown in Figure 10-3.

Service plates are normally used at formal dinners. These are large plates that are placed on the table at the time it is set for the meal. They are not removed until replaced by the heated dinner plate for the first hot course after the soup. They are used only because it is considered bad form for the diners not to have plates before them throughout the meal until the table is cleared for dessert. No food is placed directly on the service plate. Instead, dishes containing the first courses of the meal, such as fruit, oysters, and soup, are set upon the service plate. Although bread and butter plates were never used for formal dinners in the past, they are frequently used today. When used, the bread and butter plates are placed above the points of the fork.

All foods are served from the left, and beverages are served from the right. Dishes are removed from the right. An exception to this rule is the replacing of silverware. Those pieces of silverware which are placed to the right of the place plate are replaced from the right. In this way it is not necessary to reach in front of the diner.

Assuming that the meal for which the table setting in Figure 10-3 was prepared is being served; the following order of service would be observed.

As soon as the members and their guests are seated, the first course, shrimp cocktail, is served.

When all have finished the course, the shrimp cocktail glass (often a sherbet glass), is removed with the used silverware, and the soup course is served.

When all have finished the soup course, the soup plate, service plate, and soup spoon are removed. The heated dinner plate replaces the service plate for the main course. The food is brought in on a platter or in serving dishes. The food is presented to the guest who is seated to the right of the host. The service then proceeds counterclockwise around the table.

Upon completion of the main course, the dinner plate and used silverware are removed, and the salad plate is put in its place. In order to provide faster service, the salad is usually arranged on the salad plate before it is brought in.

When all have finished their salads, the salad plate and silverware are removed. At this point, the only items remaining from the original setting are the water and wine glasses. Before the dessert is served, the crumbs, if any, should be

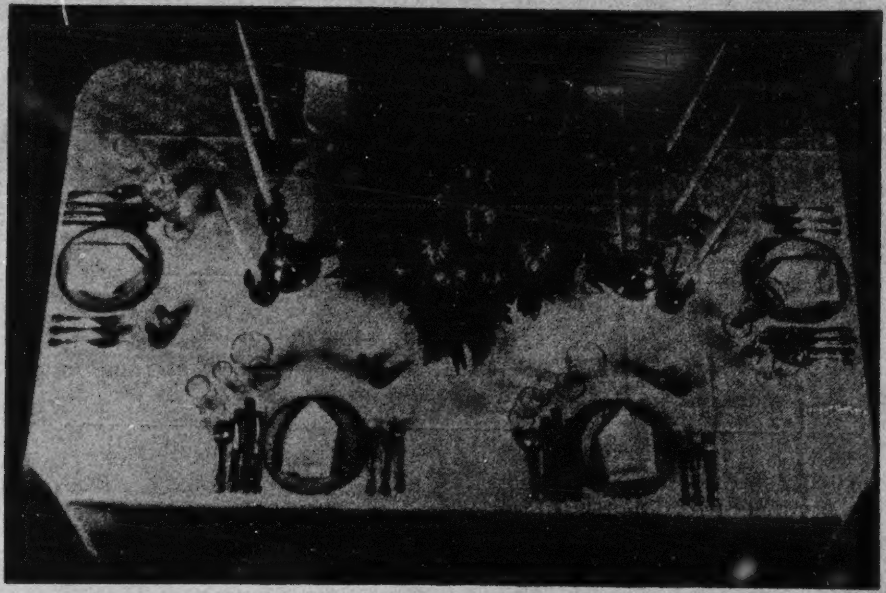


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Figure 10-3.—Table set for a formal dinner.

brushed off the table by the use of a folded napkin and tray. The dessert course with appropriate silverware is then placed before the diners.

Coffee is served with the dessert course or following it. If cups are placed on the table and coffee offered to those who want it, service is from the right.

It is customary not to smoke at formal dinners until after the coffee or demitasse has been served. At the appropriate time, cigarettes and/or cigars are passed and ashtrays are placed before those persons desiring them.

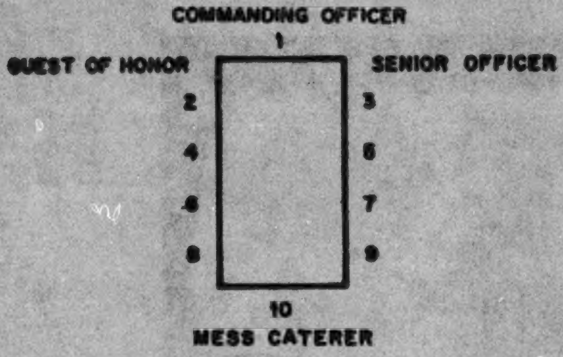
SEATING ARRANGEMENTS

In dining facilities ashore, where people come and go at different times, special seating arrangements are used only on special or formal occasions. In the wardroom where regulations and precedence closely control seating arrangements, officers are assigned to permanent seats for daily meals and are seated from left to right, as shown in Figure 10-4; according to rank and precedence.

The senior line officer in command, or in succession to command, is the president and sits at the head of the table, or at the head of the senior table when more than one table is used. Thus, the commanding officer, if he regularly eats in the wardroom, is the president. When he has his own dining facility, the executive officer is the president. The exception would be on large ships that have more than one wardroom. In this case, the senior line officer of each dining facility is the president. However, when the commanding officer or other senior officer is invited for an occasional meal, he is considered to be the guest of honor and is seated as such.

The caterer sits opposite the president. The officer next in rank sits in the first seat to the right of the president, and the officer third in rank sits in the first seat to the left of the president and so on down the table. All line officers of the same grade take precedence with each other according to their respective dates of rank. When they have the same date of rank, their precedence is according to their lineal numbers as given in the official Navy Register.

Staff officers with the same date of rank as running mates of the line take precedence AFTER their running mates of the line but ahead of all line and staff officers who are junior to the running mate. When officers of more than



125.10

Figure 10-4.—Wardroom seating.

one staff corps have the same running mate, they take precedence in the following order: Medical Corps, Supply Corps, Chaplain Corps, Civil Engineering Corps, Judge Advocate General's Corps, Dental Corps, Medical Service Corps, Nurse Corps.

When more than one table is in use, the treasurer usually sits at the head of the junior table.

The seating arrangement changes when a guest is present. If the visitor is a guest of the ship, the visitor sits to the right of the president. If the visitor is the guest of an individual officer, regardless of rank, the guest sits to the right of that officer. All other members move down to make room for the guest. When several guests are to be present, the seating arrangements are normally worked out by the wardroom supervisor and approved by the caterer. Place cards are prepared to eliminate confusion. The place card is laid flat on the napkin.

When officers of the various services have the same relative grade and the same date of rank, they have precedence according to the time each has served on active duty as a commissioned officer of the United States, Armed Forces.

A table showing the relative rank and precedence of officers of the various uniformed services is shown in Figure 10-5. This table refers to officers of the Army, Navy, Air Force, Marine Corps, and Coast Guard whether on active or retired lists, and also officers of the Public Health Service and the National Oceanographic and Atmosphere Administration when they are serving with the Navy.

Navy	Marine Corps	Army and Air Force	Coast Guard	Public Health Service	Coast and Geodetic Survey
Fleet Admiral		General of the Army			
Admiral	General	General	Admiral		
Vice Admiral	Lieutenant General	Lieutenant General	Vice Admiral		
Rear Admiral (upper half)	Major General	Major General	Rear Admiral (upper half)	Surgeon General[1]; Deputy Surgeon General	
Rear Admiral (lower half) and Commodore	Brigadier General	Brigadier General	Rear Admiral (lower half) and Commodore	Assistant Surgeon General[2]	Rear Admiral
Captain	Colonel	Colonel	Captain	Medical Director	Captain
Commander	Lieutenant Colonel	Lieutenant Colonel	Commander	Senior Surgeon[3]	Commander
Lieutenant Commander	Major	Major	Lieutenant Commander	Surgeon[3]	Lieutenant Commander
Lieutenant	Captain	Captain	Lieutenant	Senior Assistant Surgeon[3]	Lieutenant
Lieutenant (jg)	First Lieutenant	First Lieutenant	Lieutenant (jg)	Assistant Surgeon[3]	Lieutenant (jg)
Ensign	Second Lieutenant	Second Lieutenant	Ensign	Junior Assistant Surgeon	Ensign

[1] Surgeon General's grade corresponds to that of Surgeon General of the Army.
[2] May hold grade corresponding to Major General or Brigadier General.
[3] Any other officers of same grade, with titles appropriate to their duties.

125.12

Figure 10-5.—Relative rank and precedence of officers in the military service.

PRIOR TO SERVING

There are some details that should be taken care of just before the members are seated.

- Fill water glass in the pantry (three-fourths full for ease of handling and less change of spilling) and place on the table.

- Arrange butter patties on small plates and set out two per table.

- Ensure that fresh coffee is ready for those who desire coffee with their meal.

- Place individual salads on the table before the officers are seated; this should be done just prior to announcing the meal to ensure that each officer will receive a fresh, crisp salad.

- Ensure that condiments, such as cream, sugar, salt and pepper, necessary for the particular meal being served are available prior to serving.

- Place the buck on the table if it is to be used at that meal.

MEAL SERVICE

Meals should begin immediately after the president and the officers are seated. Prompt and courteous service adds much to the enjoyment of a meal, and serving personnel must be alert. They should not lean on the sideboard or lounge against the bulkhead when they are not busy. With proper training, serving personnel will know what their responsibilities are and how they should be met.

After the Meal

- Clear the table as soon as all officers have finished eating and left the table. Return all dishes, silver, and ashtrays to the pantry for washing.

- Refill the salt and pepper shakers as needed and store them in the pantry

- Inspect the napkins and place the soiled ones in the laundry. Refold those suitable for reuse and replace them in their respective napkin rings (when they are used) and stow in the pantry. Single-service paper napkins are being used in many dining facilities for regular meals and cloth napkins are used only for more formal occasions.

- Brush the crumbs from the tablecloth. Be careful not to rub food particles into the fabric.

- Shake the cloth out lightly and refold it along its original creases. Reroll or refold the silence pad as appropriate, and stow it with the tablecloth.

- Replace the table cover.

WARDROOM CARE

Field day is the time to do those major cleaning jobs that are not necessary every day. These jobs are not in place of, but in addition to the cleaning jobs previously discussed.

Most cleaning can be accomplished with the materials regularly used aboard ship. However, because there are a variety of materials used in the furnishings and fixtures of the wardroom, commercial cleaning products often give better results on some materials than the cleaning products used for the routine cleaning.

The following is a list of some of the jobs that should be performed at least weekly:

- Sideboards–Remove the drawers and clean thoroughly.

- Silverware–Inspect for signs of tarnish and polish as required. Stainless steel flatware with decorative handles is now available through the supply system for use in the dining facilities.

- Paintwork–Scrub and wash.

- Wood paneling–Clean with furniture polish.

- Table, chairs, and sofa covers–Inspect and take the soiled ones to the dry cleaner.

- Overhead and electric fans—Clean and/or brush.

- Lounge furniture with vinyl upholstery—Check and clean as necessary.

- Carpeting—Shampoo as necessary.

PANTRY SUPERVISION

As a petty officer you may be responsible for supervising the wardroom pantry. To a large degree, the success of a meal depends upon the efficiency of pantry personnel, and unauthorized persons should not be permitted inside the pantry to interfere with the performance of the pantry personnel. The pantry is a busy place at mealtime, and space is usually limited. It is therefore necessary for each man to know what he is to do and when he should do it so that all preparations can be completed on time. Many of these jobs can be done well in advance of mealtime.

The pantry supervisor should know which officers will be eating late meals because of watches or other duties, and sufficient portions should be set aside and kept warm and edible until they are served.

Substitute foods should be kept on hand for use on occasions when the food prepared for a meal runs short before the meal is over. Such items as canned meat, vegetables, and fruits can be opened, heated, and served quickly.

Most butter is now purchased as patties. It should be removed from the package and placed on the serving dish and placed in the refrigerator or on cracked ice until serving time. Butter that is not preformed should be cut into patties and stored as described above.

Coffee (except when a silex-type coffee maker is used in the wardroom) and other beverages are normally prepared in the pantry. Fresh coffee should be made the first thing in the morning, before each meal, and often enough throughout the day so that good coffee is always available to those who want it. Beverages which are to be served cold such as tea, and fruit drinks should be prepared well in advance of meal time so that they can be chilled before they are served. This prevents excessive dilution from melting ice when the drink is poured into the glass.

Sandwiches, individual salads, and desserts may also be prepared ahead of time. However, you must make sure that the men preparing them store them properly in order to maintain freshness, palatability, and appearance and observe the rules of sanitation.

Cloth napkins should not be brought into the pantry. If they are, they may be used as dishcloths or pot holders which would probably cause permanent stains and make them unsuitable for use on the table.

Breakfasts are usually prepared in the pantry on a "to order" basis. This requires the men to keep the orders on a first come, first served basis, to prepare the food as ordered, and to deliver the food promptly to the diner. A good breakfast should be the start of a good day.

For other meals, most of the food is prepared in the galley and delivered to the pantry in large containers. Pantry personnel must keep the foods at the proper temperature until they are served. The appearance of food served or placed on the table (family style) reflects the care, attitude, and professionalism of the personnel preparing it.

WATCH SUPERVISION

The type of wardroom watch that is maintained depends on the need of the wardroom and the number of men available. In port, a watch is normally maintained after supper lasting through 2200. At sea, a 24-hour watch may be set up. The man on watch in the wardroom should:

- Ensure that fresh coffee is available at all times during his watch period.

- Check the wardroom frequently and tidy it up as necessary.

- Remove used plates and coffee cups from the wardroom and wash them.

- Empty, wash, and dry ashtrays.

- Smooth table cover and replace chairs.
- Dump trash and garbage in the trash container on the pier.
- Ensure that the wardroom and pantry are clean before his relief takes over.

The watch supervisor is usually responsible for enforcing the wardroom and pantry regulations, for ensuring that food is not handed out to unauthorized persons and for prohibiting the use of the wardroom or pantry as a lounge by enlisted personnel.

APPENDIX I

THE METRIC SYSTEM

The metric system was developed by French scientists in 1790 and was specifically designed to be an easily used system of weights and measures to benefit science, industry, and commerce. The metric system is calculated entirely in powers of 10, so one need not work with the various mathematical bases used with the English system, such as 12 inches to a foot, 3 feet to a yard, and 5280 feet to a mile.

The system is based on the "meter" which is one ten-millionth of the distance from the Equator to the North Pole. It is possible to develop worldwide standards from this base of measurement. The metric system of weights is based on the gram, which is the weight of a specific quantity of water.

Soon after the system was developed scientists over the world adopted it and were able to deal with the mathematics of their experiments more easily. The data and particulars of their work could be understood by other scientists anywhere in the world. During the early 19th century many European nations adopted the new system for engineering and commerce. It was possible for these countries to trade manufactured goods with one another without worrying whether it would be possible to repair machinery from another country without also buying special wrenches and measuring tools. Countries could buy and sell machine tools and other sophisticated and precision machinery without troublesome modifications or alterations. It was much easier to teach the metric system, since meters can be changed to kilometers or centimeters with the movement of a decimal point, which is roughly like being able to convert yards to miles or inches by adding zeros and a decimal instead of multiplying by 1760 or dividing by 36.

With the exception of the United States, all the industrialized nations of the world have adopted the metric system. Even England and Canada are changing from their traditional systems of measure, and the metric system will be almost universal by 1980.

Although the metric system has not been officially legislated by the Congress, the metric system is becoming more prominent in this country. Most automobile mechanics own some metric wrenches to work on foreign cars or foreign components in American cars. Almost all photographic equipment is built to metric standards. Chemicals and drugs are usually sold in metric quantities, and "calorie counters" are using a metric unit of thermal energy.

Because we are allied with countries who use the metric system, much of our military information is in metric terms. Military maps use meters and kilometers instead of miles, and many weapons are in metric sizes, such as 7.62 mm, 20 mm, 40 mm, 75 mm, and 155 mm. Interchange of military equipment has caused a mixture of metric and English measure equipment since World War I when the army adopted the French 75 mm field gun, and World War II when the Navy procured the Swedish 40 mm Bofors and the Swiss 20 mm Oerlikon heavy machine guns.

It is inevitable that the United States will officially adopt the metric system. Exactly when this happens and how rapidly the changeover will depend on economics, since the expense of retooling our industry and commerce to new measurements will be very great. The cost of conversion will be offset by increased earnings from selling machinery and products overseas. Another benefit is that scientists use the metric system, but their calculations now have to be translated into English measure to be used by industry. With adoption of the metric system ideas can go directly from the drawing board to the assembly line.

The Navy will be using the metric system more during the next few years. Although you will find it easier to solve problems using this system, at first you will find it difficult to visualize or to estimate quantities in unfamiliar units of measure.

Fortunately, many metric units can be related to equivalent units in the English system.

The meter which is the basic unit is approximately one-tenth longer than a yard.

The basic unit of volume, the liter, is approximately one quart. The gram is the weight of a cubic centimeter, or milliliter, of pure water and is the basic unit of weight. As a common weight though, the kilogram, or kilo, which equals the weight of a liter of water, weighs 2.2 pounds. The cubic centimeter (cc) is used where we would use the square inch, and where we measure by the fluid ounce, the metric system employs the milliliter (ml). For power measure the metric system uses the kilowatt (kW), which is approximately 1.3 horsepower.

In terms of distance, a land mile is eight-fifths of a kilometer and a nautical mile is 1.852 kilometers, or nearly 2 kilometers.

A basic metric expression of pressure is the kilogram per square centimeter, which is 14.2 psi, nearly 1 atmosphere of pressure.

When working on foreign machinery, you may notice that your half-inch, three-quarter inch, and one-inch wrenches will fit many of the bolts. These sizes correspond to 13 mm, 19 mm, and 26 mm respectively in the metric system, and are very popular because they are interchangeable. The 13/16-inch spark plug wrench, which is standard in this country, is intended to fit a 20 mm nut.

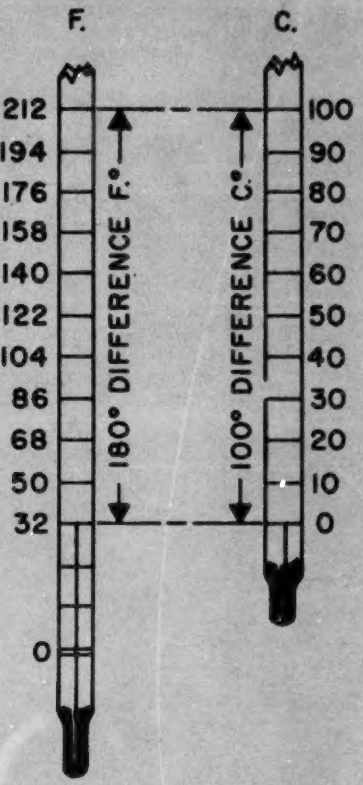
The basic quantities of the metric system are multiplied or divided by powers of 10 to give other workable values. We cannot easily measure machine parts in terms of a meter, so the millimeter, or one-thousandth of a meter is used. For very fine measure the micron, also called the micrometer, can be used. It is one-millionth part of a meter, or one-thousandth of a millimeter. For small weights the milligram, one-thousandth of a gram is used. All of these multiples are expressed with standard prefixes taken from Latin:

micro = 1/1,000,000
milli = 1/1,000
centi = 1/100
*deci = 1/10
*deca = 10
*hecto = 100
kilo = 1,000
*myria = 10,000
mega = 1,000,000

* Rarely used

Over the next few years the metric system will become more used by the Navy as well as by the civilian world. You will find it easy to work with once you have mastered the basic terms. It will be difficult to translate values from our present system to the metric system, but this operation will become unnecessary once the new measurements are totally adopted.

Tables of equivalent English measure and metric equivalents are essential when you work simultaneously with both systems. The table which follows shows the equivalent measures of the two systems. The columns on the left have the equivalent values which are accurate enough for most work, and on the right are the multiples used to convert the values with a high degree of accuracy.



Fahrenheit and Celsius Scales Showing Differences in Freezing and Boiling Points.

The conversion from one scale to the other can be accomplished by studying the accompanying illustration and applying the following principles:

The boiling point of water is 100° centigrade and 212° Fahrenheit; the freezing point is 0° centigrade and 32° Fahrenheit. The difference between the boiling point and the freezing point of water is 100° centigrade and 180° Fahrenheit. Therefore, within this span on the thermometers 1° centigrade is equal to 1.8° Fahrenheit.

However, temperature readings on either scale are taken in respect to the number of degrees below or above zero, thus 32° must be added to the 180° Fahrenheit in order to obtain the total reading from the Fahrenheit zero point. Substituting these values into the conversion formula (°C.X1.8)+32°, we have (100°X1.8)+32°=212° Fahrenheit.

If we wish to convert Fahrenheit degrees to centigrade degrees, the algebraic order of calculation must be reversed and we find that (°F.-32°)÷1.8=°C. Substituting the values we find (212° -32°)÷1.8=100°C.

To recapitulate, conversion formulas are as follows:

$$°F.=(°C.X1.8)+32°$$

$$°C.=(°F.-32°)÷1.8$$

For those who prefer to use fractions in computations, the fraction 9/5 may be substituted for 1.8.

THESE PREFIXES MAY BE APPLIED TO ALL SI UNITS

Multiples and Submultiples	Prefixes	Symbols
1 000 000 000 000 = 10^{12}	tera (tĕr′ȧ)	T
1 000 000 000 = 10^{9}	giga (jĭ′gȧ)	G
1 000 000 = 10^{6}	mega (mĕg′ȧ)	M*
1 000 = 10^{3}	kilo (kĭl′ō)	k*
100 = 10^{2}	hecto (hĕk′tō)	h
10 = 10	deka (dĕk′ȧ)	da
0.1 = 10^{-1}	deci (dĕs′ĭ)	d
0.01 = 10^{-2}	centi (sĕn′tĭ)	c*
0.001 = 10^{-3}	milli (mĭl′ĭ)	m*
0.000 001 = 10^{-6}	micro (mī′krō)	μ*
0.000 000 001 = 10^{-9}	nano (năn′ō)	n
0.000 000 000 001 = 10^{-12}	pico (pē′kō)	p
0.000 000 000 000 001 = 10^{-15}	femto (fĕm′tō)	f
0.000 000 000 000 000 001 = 10^{-18}	atto (ăt′tō)	a

*Most commonly used

Multiply	By	To Obtain	Multiply	By	To Obtain
Acres	40.47	Ares	Feet	30.48	Centimeters
Acres	4,047	Centares	Feet	0.1667	Fathoms
Acres	10	Square chains	Feet	0.3048	Meters
Acres	43,560	Square Feet	Feet per Minute	0.01136	Miles per Hour
Acres	4,840	Square Yards	Feet per Second	0.5921	Knots
Ares	0.02471	Acres	Feet per Second	18.288	Meters per Minute
Ares	100	Centares	Feet per Second	0.6818	Miles per Hour
Ares	1,076	Square Feet	Furlongs	10	Chains
Ares	119.6	Square Yards	Furlongs	660	Feet
Barrals (U.S., dry)	3.281	Bushels	Furlongs	40	Rods
Barrels (U.S., liquid)	4.21	Cubic Feet	Furlongs	220	Yards
Barrels (U.S., liquid)	31.5	Gallons	Gallons (British)	4,546.1	Cubic Centimeters
Board Feet (1' x 1' x 1"	144	Cubic inches	Gallons (British)	0.1605	Cubic Feet
Cable lengths (U.S.)	120	Fathoms	Gallons (British)	277.274	Cubic Inches
Cable lengths (U.S.)	720	Feet	Gallons (British)	1.2009	Gallons (U.S.)
Cable lengths (U.S.)	240	Yards	Gallons (British)	4.546	Liters
Centares	10.76	Square feet	Gallons (British)	4	Quarts (British)
Centares	1.196	Square Yards	Gallons (U.S.)	0.03175	Barrels (liquid, U.S.)
Centimeters	0.3937	Inches			
Cubic Centimeters	0.06102	Cubic Inches	Gallons (U.S.)	3,785.4	Cubic Centimeters
Chains	66	Feet	Gallons (U.S.)	0.13368	Cubic Feet
Chains	100	Links	Gallons (U.S.)	231	Cubic Inches
Chains	4	Rods	Gallons (U.S.)	0.8327	Gallons (British)
Cubic Feet	1,728	Cubic Inches	Gallons (U.S.)	3.785	Liters
Cubic Feet	0.02832	Cubic Meters	Gallons (U.S.)	4	Quarts (U.S.)
Cubic Feet	0.03704	Cubic Yards	Grams	15.43	Grains
Cubic Feet	6.229	Gallons (British)	Grams	0.001	Kilograms
Cubic Feet	7.481	Gallons (U.S.)	Grams	1,000	Milligrams
Cubic Feet	28.316	Liters	Grams	0.03527	Ounces (avoirdupois)
Cubic Inches	16.39	Cubic Centimeters			
Cubic Inches	0.0005787	Cubic Feet	Hands	10.16	Centimeters
Cubic Inches	0.003606	Gallons (British)	Hands	4	Inches
Cubic Inches	0.004329	Gallons (U.S.)	Hectares	2.471	Acres
Cubic Inches	0.01639	Liters	Hectares	100	Ares
Cubic Meters	35.31	Cubic Feet	Hectoliters	0.1	Cubic Meters
Cubic Meters	1.308	Cubic Yards	Hectoliters	26.417	Gallons (U.S.)
Cubic Yards	27	Cubic Feet	Hectoliters	100	Liters
Cubic Yards	0.7646	Cubic Meters	Hogsheads	2	Barrels (Liquid, U.S.)
Cubic Yards	764.6	Liters			
Degrees (C.)+ 17.8	1.8	Degrees (F.)	Hogsheads (U.S.)	63	Gallons (U.S.)
Degrees (F.) −32	0.5556	Degrees (C.)	Hundredweights	0.508	Quintals (metric)
Degrees	0.01745	Radians	Inches	72	Points
Fathoms	0.00833	Cable Lengths (U. S.).	Inches	6	Picas
			Inches	6	Ems
Fathoms	6	Feet	Inches	12	Ens
Fathoms	1.8288	Meters	Inches	2.54	Centimeters

Multiply	By	To Obtain	Multiply	By	To Obtain
Inches	0.0833	Feet	Miles, Nautical	6,076.1	Feet
Inches	1,000	Mils	Miles, Nautical	72,963	Inches
Inches	0.0277	Yards	Miles, Nautical	1.8532	Kilometers
Inches of Mercury	0.49131	Pounds per Square Inch	Miles, Nautical	1,853.2	Meters
Kilograms	1,000	Grams	Miles, Nautical	1.1508	Miles, Statute
Kilograms	2.2046	Pounds (Avoirdupois)	Miles, Nautical	1	Minutes of Latitude
Kiloliters	1	Cubic Meters	Miles, Nautical	2,026.8	Yards
Kiloliters	1.308	Cubic Yards	Miles per Hour (Statute)	88	Feet per Minute
Kiloliters	264.18	Gallons (U.S.)			
Kiloliters	1,000	Liters	Miles per Hour (Statute)	1.467	Feet per Second
Kilometers	4.557	Cable Lengths			
Kilometers	3,280.8	Feet	Miles per Hour	0.8684	Knots
Kilometers	39,370	Inches	Miles, Statute	7.33	Cable Lengths
Kilometers	1,000	Meters	Miles, Statute	5,280	Feet
Kilometers	0.5396	Miles, Nautical	Miles, Statute	8	Furlongs
Kilometers	0.62137	Miles, Statute	Miles, Statute	63,360	Inches
Kilometers	1,093.6	Yards	Miles, Statute	1.6093	Kilometers
Knots	1.1516	Statute Miles per Hour	Miles, Statute	1,609.3	Meters
			Miles, Statute	0.8689	Miles, Nautical
Knots	1.688	Feet per Second	Miles, Statute	1,760	Yards
Leagues, Nautical	25.33	Cable Lengths	Millier (See Tons – Metric)		
Leagues, Nautical	5.5597	Kilometers			
Leagues, Nautical	3	Miles, Nautical	Milliradians	206.265	Seconds of Arc
Leagues, Statute	4.8280	Kilometers	Mils	0.001	Inches
Leagues, Statute	3	Miles, Statute	Myriameters	10	Kilometers
Links	7.92	Inches	Ounces (avoirdupois)	28.3495	Grams
Liters	1,000	Cubic Centimeters	Pint (Liquid, U.S.)	4	Gills (U.S.)
Liters	61.025	Cubic Inches	Pint (Liquid, Br.)	4	Gills (British)
Liters	0.21998	Gallons (British)	Pint (Liquid, Br.)	0.56825	Liters
Liters	0.26418	Gallons (U.S.)	Pint (Liquid, U.S.)	0.4732	Liters
Liters	0.8799	Quarts (British)	Pounds (avoirdupois)	7,000	Grains
Liters	0.908	Quarts (U.S., dry)	Pounds (avoirdupois)	453.59	Grams
Liters	1.0567	Quarts (Liquid, U.S.)	Pounds (avoirdupois)	0.4536	Kilograms
			Pounds (avoirdupois)	16	Ounces
Meters	100	Centimeters	Pounds (avoirdupois)	1.2153	Pounds (troy)
Meters	0.001	Kilometers	Pounds (troy)	0.8229	Pounds (avoirdupois)
Meters	1.0936	Yards			
Meters	3.281	Feet	Pounds per Square Inch	2.03537	Inches of Mercury
Meters	39.37	Inches			
Meters	1,000	Millimeters	Quart (British)	1.1365	Liters
Meters	1.0936	Yards	Quart (British)	2	Pints (British)
Meters per Minute	0.0547	Feet per Second	Quart (Liquid, U.S.)	0.9463	Liters
Meters per Second	2.237	Miles per Hour	Quart (U.S.)	2	Pints (U.S.)
Microns	0.001	Millimeters	Quintals (Metric)	1.97	Hundredweights
Miles, Nautical	8.44	Cable Lengths	Quintals (Metric)	100	Kilograms

Multiply	By	To Obtain	Multiply	By	To Obtain
Radians	57.30	Degrees	Square Miles, Statute	259	Hectares
Rods	16.3	Feet	Square Miles, Statute	2.59	Square Kilometers
Rods	25	Links	Square Yards	0.8362	Centares
Square Centimeters	0.1550	Square Inches	Square Yards	9	Square Feet
Square Feet	0.0929	Centares	Square Yards	1,296	Square Inches
Square Feet	929	Square Centimeters	Tons (Long)	1.016	Metric Tons
Square Feet	144	Square Inches	Tons (Long)	2,240	Pounds (Avoirdupois)
Square Feet	0.1111	Square Yards			
Square Inches	6.452	Square Centimeters	Tons (Metric) (Millier)	1,000	Kilograms
Square Inches	0.006944	Square Feet			
Square Kilometers	100	Hectares	Tons (Metric) (Millier)	2,204.6	Pounds (Avoirdupois)
Square Kilometers	0.3861	Square Miles (Statute)	Tons (Short)	0.9072	Metric Tons
Square Meters (See Centares)			Tons (Short)	2,000	Pounds (Avoirdupois)
Square Miles, Statute	640	Acres	Yards	91.44	Centimeters
Square Miles, Statute	25,900	Ares	Yards	0.9144	Meters

APPENDIX II

GLOSSARY

Absorption	(Baking term) Refers to the property of flour to absorb and hold liquid. (Frying) Refers to fat absorption in food products as they are fried in deep fat.
Acidity	Sourness or tartness in a food product; a condition indicating excess fermentation in yeast dough; with soda, generates carbon dioxide for leavening in cakes.
Aeration	The treatment of dough or batter by charging with gas to produce a volume increase; to induce air so that a mass becomes lighter or fluffier.
Aerobic bacteria	Those which require the presence of free oxygen, such as found in the air, for growth.
Aging	A flavor-enhancing process usually applied to beef. The meat is hung in a temperature-controlled room for a specific period of time. During this time a chemical reaction occurs in the meat; it becomes more tender because of the partial "digestion" of the connective tissue in the meat. Aged flavor is noticeable after 21 days at chill temperatures.
A la king	Food served with a rich cream sauce usually containing green peppers and pimientos, and sometimes mushrooms or onions.
A la mode	In a fashion or the style of; for example, desserts served with ice cream or pot roast of beef cooked with vegetables.
Albumen	Egg white.
Almond paste	A confection ingredient made of finely ground almonds and sugar.

Ambrosia	(Greek mythology) Descriptive term applying to any food or drink exquisitely gratifying in taste or scent; the name of a favorite southern dessert made of oranges, bananas, pineapple, and shredded coconut.
Amoeba	One of the simplest forms of animal life; grows in water.
Anaerobic bacteria	Those which grow in an absence of free oxygen, deriving oxygen from solid or liquid materials and producing toxic substances.
Anglaise	(French) English, a la anglaise means "in English style," as Consome Anglaise.
Antioxidant	A chemical solution in which fruits and vegetables are dipped to prevent darkening.
Antipasti	(or Antipasto) (Italian) An appetizer, or a spicy first course consisting of relishes, cold sliced meats rolled with or without stuffings, fish, or other hors d'oeuvres eaten with a fork.
Antiseptic	An agent that may or may not kill microorganisms, but does inhibit their growth. Peroxide is an example.
Appetizer	A small portion of food or drink before, or as the first course of, a meal. These include a wide assortment of items ranging from cocktails, canapes, and hors d'oeuvres to plain fruit juices. The function of an appetizer is to pep up the appetite.
Aspic	(French) A molded jelly made from different preparations. The base is gelatin which sets the mixture. Various liquids may be used, but tomato juice is most common. Recipes may require chopped vegetables, fish, poultry, or meats in aspic.
Au gratin	(French) Food creamed or moistened with eggs, milk, or stock, covered with bread crumbs and butter or cheese, and baked until the top is brown.
Au jus	(French) With natural juice. Roast Rib au jus, for example, is beef served with unthickened gravy.
Au naturel	(French) In a natural manner. A dish served in a simple style.
Bacilli	Cylindrical or rod-shaped bacteria responsible for such diseases as botulism, typhoid fever, and tuberculosis.

Bacteria	Microscopic, one-celled organisms found in soil, water, and most material throughout nature. Some are responsible for disease and food spoilage, others are useful in industrial fermentation.
Bactericide	Any substance that kills bacteria and related forms of life.
Bake	To cook by dry heat in an oven either covered or uncovered. Usually called roasting when referring to meats.
Barbecue	To roast slowly, basting with a highly seasoned sauce.
Baste	To moisten foods while cooking, especially, while roasting meat. Melted fat, meat drippings, stock, water and fat, or water may be used.
Batter	A homogeneous mixture of ingredients with liquid to make a mass that is semi-liquid.
Bavarian cabbage	(German) Sauteed cabbage with onions and vinegar.
Bavarian Cream	(German) A variation of soft custard into which gelatin and whipped cream and sometimes egg whites and flavoring are folded.
Beat	To blend and introduce air by using a rapid over-and-over or rotary motion.
Bechamel Sauce	(French) A seasoned cream sauce with meat stock; egg yolks may be added for color and different consistency. Used for vegetables, meat, fish, and poultry.
Bench tolerance	(Baking term) The property of dough to ferment at a rate slow enough to prevent overfermentation while dough is being made up into units on the bench.
Bisque	(French) A thick soup, usually made with a white sauce base and containing fish, shellfish, chicken, or cooked meat. Ingredients are pureed. Also, a rich frozen dessert, often containing powdered nuts or macaroons.
Blanc mange	(French) Literally, "white food." A pudding thickened with cornstarch only.
Blanch	1. To partially cook in hot, deep fat for a short time until clear but not brown. Used for potatoes. 2. To

Blanch, cont.	rinse with boiling water, drain, and rinse with cold water. Used for rice, macaroni, and other pastas to prevent sticking. 3. A method used to remove skins from almonds.
Bleeding	Dough that has been cut and left unsealed at the cut, thus permitting the escape of leavening gas. Also applies to icing that bleeds.
Blend	To thoroughly mix two or more ingredients.
Boil	To cook in a liquid which bubbles actively during the time of cooking. The boiling temperature at sea level is 212° F.
Botulinus	A deadly bacterium which develops in canned food that have been improperly canned.
Bouillon	(French) A clear soup made from beef or chicken stock. May be used as a soup or gravy base. Obtainable in cubes or powder for reconstituting.
Bowl knife	A spatula or flexible dull-edge knife used to scrape batter or dough from bowl sides.
Braise	To brown meat or vegetables in a small amount of fat, then to cook slowly, covered, at simmering temperature (185° to 210° F) in a small amount of liquid. The liquid may be juices from meat or added water, milk, or meat stock.
Bran	Skin or outer covering of the wheat kernel.
Bread	To cover with crumbs or other suitable dry coating ingredient; or to dredge in a mixture of flour, seasonings, and/or condiments, dip in a mixture of milk and slightly beaten eggs and then dredge in bread crumbs.
Broil	To cook under or over direct heat; to grill. No liquid is added. Oven–to cook in an oven, uncovered. Griddle–to cook uncovered on a hot griddle removing grease as it accumulates.
Brown	To seal juices inside a piece of food by searing its surfaces on a hot griddle or pan.
Brunswick Stew	A main dish composed of a combination of poultry, meats, and vegetables.

Butterfly	A method of cutting double chops (usually pork) from boneless loin strips. The double chops are joined by a thin layer of meat.
Butterhorns	Basic sweet dough cut and shaped like horns.
Butter sponge	Cake made from sponge cake batter to which shortening has been added.
Butterscotch	A flavor produced by the use of butter and brown sugar.
Cacciatiore	(Italian) Refers to a chicken cooked "hunter" style. Browned chicken is braised in a sauce made with tomatoes, other vegetables, stock, and herbs.
Camembert	Soft, full flavored cheese.
Canape	(French) An appetizer eaten with the fingers, served either hot or cold. Small pieces of bread, toast, or crackers topped with a tasty spread.
Candy	To cook in sugar or sirup.
Capon	A young male bird which has been castrated at an early age, to improve the flavor, and fattened.
Caramelize	To heat sugar or food containing sugar until sugar melts and a brown color and characteristics flavor develops.
Carmelized sugar	Dry sugar heated with constant stirring until melted and dark in color, used for flavoring and coloring.
Carbohydrates	Sugars and starches derived chiefly from fruits and vegetable sources which contain set amounts of carbon, hydrogen, and oxygen.
Carbon dioxide	A colorless, tasteless, edible gas obtained during fermentation or from a combination of soda and acid.
Cardamon	Seed of an East Indian spice plant used for flavoring.
Carriers	Persons who harbor and disseminate germs without having symptoms of a disease. The individual has either had the disease at one time and continues to excrete the organism, or has never manifested symptoms because of good resistance to the disease.
Chiffon cake	A sponge cake containing liquid shortening

Chiffon pie	A pie shell filled with a rich custard-type filling into which whipped egg whites and/or cream have been folded.
Chiffonade	(or Chiffonnade)(French) A method of cutting foods into fine strips to be used as garnishes. (See also julienne).
Chiffonade dressing	A salad dressing containing strips of hard cooked eggs and beets.
Chili	(Spanish) A pepper or its fruit. Dried chili peppers are ground into chili powder.
Chile con carne	(Mexican) A dish consisting of ground beef and beans seasoned with chile powder.
Chop	To cut food into irregular small pieces with a knife or chopper.
Chop Suey	A thick stew originating in American-Chinese restaurants, composed of thin slices of pork and various vegetables, among which is a generous amount of bean sprouts, celery, and onions.
Coagulate	To curdle, clot, congeal, or solidify.
Choux paste	A pastry dough interlayered with butter or shortening to attain flakiness; leavened during baking by the internally generated steam; used to make eclairs and cream puffs; also called puff paste.
Chutney	A pickle relish originating in India. Many kinds and amounts of different ingredients are used.
Coat	To cover entire surface of food with a given mixture.
Compounds	(Baking term) Certain mixtures of fats and oils.
Condiments	Substances which in themselves furnish little nourishment but have stimulating flavor.
Congealing point	Temperature at which a liquid changes to a plastic or solid.
Consomme	(French) A clear soup made from two or more kinds of concentrated meat stock.
Cooking losses	Weight loss, loss of nutrients, and possibly a lowered palatability resulting from cooking foods.

Corn	A method of preserving and seasoning with salt brine and other preservatives.
Creaming	The process of mixing and aerating shortening and another solid, such as sugar or flour; to thoroughly blend.
Creampuffs	Baked puffs of creampuff dough which are hollow; usually filled with whipped cream or cooked custard.
Creole	A sauce cooked and used over poultry served with rice or a casserole dish of poultry or seafood and rice cooked in such a sauce.
Crescent rolls	Hard-crusted rolls shaped into crescents, often with seeds on top.
Cripple	A misshapen, burnt, or otherwise undesirable baked item.
Croquette	(French) A product made by incorporating a minced vegetable, fish, poultry, or meat into shaped balls or cones which are rolled in crumbs and fried.
Croutons	(French) Bread cut into small, cubed pieces and either fried or browned in the oven, depending upon the intended use. They are fried for use as a garnish or baked when used as an accompaniment for soup.
Crullers	Long, twisted, baking powder doughnuts.
Crusting	Formation of dry crust on surface of doughs due to evaporation of water from the surface.
Cube	To cut any food into square shaped pieces.
Curdle	To change into curd; to coagulate or thicken.
Currant	The acid berry of several species of shrubs of the gooseberry family; used primarily for jelly and jam.
Curry	A powder made from many spices and used as a seasoning for Indian and Oriental dishes (shrimp or chicken curry).
Cut in	Baking term which means to combine solid shortening and flour with a pastry blender or knife.
Danish pastry	A flaky yeast dough having butter or shortening rolled into it.

Dash	A scant 1/8 teaspoon.
Demi-tasse	A half cup. In this country, the term is applied to after-dinner coffee, which is usually served in half-size cups. Demi-tasse coffee is usually made stronger than that served with a meal.
Diastase	An enzyme possessing the power to convert starches into destrose and maltose.
Dice	To cut into cubes of approximately 1/4 inch.
Disinfectant	A chemical agent which destroys bacterial and other harmful organisms.
Dissolve	To mix a solid dry substance with a liquid until solid is in solution.
Divider	(Baking term) A machine used to cut dough into a desired size or weight.
Dock	To punch a number of vertical impressions in a dough with a smooth round stick about the size of a pencil to allow for expansion and permit gas to excape during baking.
Dough	The thickened uncooked mass of combined ingredients for bread, rolls, and cookies, but usually applied to bread.
Drawn butter	(or sauce) When salted butter is melted, the salt separates from the oil and settles. The oily portion is poured, or "drawn" off, hence, the name. Drawn butter may be used unthickened, seasoned with a little lemon or a dash of Worchestershire sauce and a bit of chopped parsley, chives, or mint. Drawn butter sauce is a thickened sauce made from drawn butter and used with fish, shellfish, and green vegetables.
Dredge	To coat food items with flour, sugar, or meal.
Dress	As applied to food: to prepare for cooking or for the table, as to dress a chicken.
Drippings	Fat and juices dripped from roasted meat.
Dry yeast	A dehydrated form of yeast.
Duchess	(or Duchesse) A name given to various mixtures to which beaten whole eggs (or whites only in some dessert items) are added. The mixture is shaped into

Duchess, cont.	balls and baked. A method used most often with mashed potatoes.
Dusting	A light film of flour or starch which is placed on pans or workbench to prevent dough from sticking.
Eclair	(French) A small filled pastry made from cream puff batter (or choux paste). The filling varies, but usually is vanilla cream filling or whipped cream injected from a special tube filler. The baked, filled shell is dusted with confectioners sugar or covered with a thin layer of chocolate.
Emulsification	The process of blending together fat and water solutions to produce a stable mixture which will not separate on standing.
Enchiladas	(Mexican) A dish popular in many parts of the United States consisting of tortillas topped with a meat sauce and cheese.
Enriched bread	Bread made from enriched flour and containing federally prescribed amounts of thiamin, riboflavin, iron and niacin.
Entree	(French) An intermediary course of a meal, which in the United States is the "main" course.
Enzyme	A substance produced by living organisms which has the power to bring about changes in organic materials.
Extract	Essence of fruits or spices used for flavoring.
Fiesta	(Spanish) Designates a special recipe used on holidays in Spain.
Fell	A thin papery membrane which covers the lamb carcass.
Fermentation	The chemical change of an organic compound due to action of living organisms (yeast or bacteria), usually producing a leavening gas.
Filet	(French) Designates a French method of dressing fish, poultry, or meat to exclude bones and include whole muscle strips. The English term is "Fillet."
Filet Chateaubriand	Extra thick filet mignon, Russian style, baked in the oven.

Filet Mignon	May be tenderloin of beef, mutton, veal or pork.
Finger rolls	A bun about 5 in. long and 1 in. wide.
Flour	
Bleached flour	Flour that has been treated by a chemical to remove its natural color and make it white.
Bolting	Sifting of ground grain to remove the bran and coarse particles.
Clear Flour	Lower grade and higher ash content flour remaining after the patent flour has been separated.
Patent flour	The flour made from the choice, inner portion of the wheat grain.
Straight flour	Flour containing all the wheat grain except the bran, termed 100 per cent.
Strong flour	One which is suitable for the production of bread of good volume and quality because of its gas retaining qualities.
Water absorption	The ability of flour to absorb water. Factors which affect this ability are: age of the flour, moisture content, wheat from which it is milled, storage conditions, and milling process.
Fluff	A mass of beaten egg white, air, and crushed fruit.
Foam	Mass of beaten egg and sugar, as in spongecake before the flour is added.
Fold in	To combine ingredients very gently with an up-and-over motion, lifting one ingredient up through the others.
Fondue	A dish made of melted cheese, butter, eggs, milk, and bread crumbs. The dish has many variations.
Food infection	A food-borne illness which is obtained from ingesting foods carrying bacteria which later multiply within the body and produce disease.
Food poisoning	Food intoxication. A food-borne illness contracted through ingesting food containing some poisonous substance.
Foo Young	(Chinese) A dish made with scrambled eggs or omelet with cut Chinese vegetables, onions, and meat. Usually, the dish is served with a sauce.

Formula	In baking, a recipe giving ingredients, amounts to be used, and the method of preparing the finished product.
Franconia	(German) An ancient German territory. In culinary sense, means "browned," as whole potatoes browned with roast.
Freeze drying	Drying method where the product is first frozen and then placed in a vacuum chamber (freeze dehydration). Aided by small controlled inputs of thermal or microwave energy, the moisture in the product passes directly from the ice-crystalline state to moisture vapor and is evacuated.
French bread	An unsweetened crusty bread, baked in a narrow loaf, and containing little or no shortening.
Frenching	A method of preparing boneless veal or pork chops by flattening with a cleaver.
Fricassee	To cook by braising; usually applied to poultry or veal cut into pieces.
Fritters	Originally a small portion of fruit dipped in batter and fried. The term now includes plain fried balls of batter or balls containing chopped meat, poultry, fruit, or vegetables.
Frizzle	To cook in a small amount of fat until food is crisp and curled at the edges; a meat crimped, frizzed, or curled at the edges, as Frizzled Dried Beef and Scrambled Eggs.
Fry	To cook in hot fat. When a small amount of fat is used, the process is known as pan frying or sauteing; when food is partially covered by the fat, shallow frying; and when food is completely covered, deep-fat frying.
Fumigant	A gaseous or colloidal substance used to destroy insects or pests.
Fungicide	An agent that destroys fungi.
Garnish	To decorate a dish with colorful, savory food items, such as sprigs of parsley placed around fish or potatoes or a colorful bit of fruit added to a dessert.
Gelatinize	The swelling of starch particles in hot water.

Germ	A pathogenic, or disease-producing, bacterium; a living substance capable of developing into an animal or plant.
Germicide	An agent capable of destroying germs.
Glace	A thin sugar sirup coating (or a thickened sugar mixture) used for coating pastries, cakes, and meats.
Glucose	A simple sugar made by action of acid on starch. It is made chiefly from cornstarch and is usually referred to as corn sirup.
Gluten	The elastic protein mass that is formed when flour is mixed with water. Composed of two proteins: gliadin for elasticity and glutenin for strength.
Goulash	(Hungarian) A national stew of Hungary, variously made in the United States of either beef, veal, or frankfurters with onions and potatoes. A covering sauce has tomato paste and paprika as ingredients. It may be served with sour cream.
Graham Flour	Finely ground whole wheat flour.
Graining	Refers to the formation of crystals in a cooled sugar solution after it has been boiled. If cooling is slow, large crystals will form. Rapid cooling produces small crystals. Small, fine crystalization, desired in making fondant, is accomplished by rapid mixing during cooling.
Grate	To pulverize food items by rubbing on the rough surface of a grater.
Grease	To rub utensil with grease (butter or other fat) preparatory to putting a food material in it to be cooked.
Grill	To cook, uncovered on a griddle, removing grease as it accumulates. No liquid is added.
Gumbo	A creole dish, resembling soup, which is thickened with okra, its characteristic ingredient.
Hard Sauce	A dessert sauce made of butter and confectioners sugar thoroughly creamed. The mixture is thinned or tempered with either boiling water or spirits.
Hash	A dish made of chopped or minced meat and/or vegetable mixture in brown stock.

Hearth	The heated baking surface of the floor of an oven.
Hermits	A rich short-flake cookie.
Hollandaise	A hot sauce made with egg yolks and butter and served with vegetables.
Hor d'oeuvres	(French) Light snack-type food eaten hot or cold at the beginning of a meal. These foods correspond to the Italian antipasto and the Scandanavian smorgasbord.
Host	Any living animal or plant affording food for growth to a parasite.
Hot cross buns	A sweet, spicy, fruity bun with a cross cut on the top which is usually filled with a plain frosting.
Humidity	Usually expressed as relative humidity. The capacity of air to retain moisture varies with its temperature. Thus, relative humidity is the present moisture content related to total moisture capacity for the present temperature and stated as a percent.
Hush puppies	A bread served mostly in the South with fish and is made by deep frying cornbread batter seasoned with onions.
Hydrogenated oil	A natural oil that has been treated with hydrogen to convert it to a hardened form.
Incubation period	That time between entrance of disease-producing bacteria in a person and the first appearance of symptoms.
Insecticide	Any chemical substance used for the destruction of insects.
Invert sugar	A mixture of dextrose and levulose made by inverting sucrose with acid or enzymes.
Italienne	(French) Refers to Italian style of cooking.
Jambalaya	A creole rice-tomato dish with either fish, shellfish, or meat.
Jardiniere	(French) A meat dish or a garnish, "garden" style, made of several kinds of vegetables.
Jellywreath	A rolled ring of basic sweet dough containing jelly.

Julienne	(French) A way of cutting vegetables, meat or poultry into fine strips or shreds.
Kebab	(Turkey) A combination of cubes of meat, usually lamb and chunks of vegetables or fruit, placed alternately on a skewer and broiled.
Knead	To alternately press and turn and fold dough with the hands for the purpose of expelling gas and redistributing the yeast.
Kolaches	(Czechoslovakia or Bohemia) A bun made from a soft dough topped with fruit, nuts, fruit-nut, or seed fillings.
Lactic acid	An organic acid sometimes known as the acid of milk because it is produced when milk sours. Souring is caused by bacteria.
Lactose	The sugar of milk.
Lady fingers	A cookie made with a sponge cake batter and baked in special pans.
Larding	To cover uncooked lean meat or fish with strips of fat, or to insert strips of fat with a skewer.
Lasagna	(Italian) A baked Italian dish with broad noodles, or lasagna macaroni, which has been cooked, drained and combined in alternate layers with Italian meat sauce and two or three types of cheese (cottage, Ricotta, Parmesan, or Mozzarella).
Leavening	Raising or lightening by air, steam or gas (carbon dioxide). Usually, the agent for generating gas in a dough or batter is yeast or baking powder.
Levulose	A simple sugar found in honey, fruits, and invert sugar.
Lyonnaise	(French) A seasoning with onions and parsely originating in Lyons, France. Sauteed potatoes, green beans, and other vegetables are seasoned this way.
Macaroon	A rich, chewy cookie made with almond paste and shredded coconut.
Macedoine	(French) A name derived from the country of Macedonia; refers to a mixture of fruits or vegetables used for garnish or as a cocktail.

Madrilene	(French) A name of a clear soup; other dishes flavored with tomato juice.
Magenta	(Italian) A purplish shade of red produced by the use of tomato juice as, for example, in soup.
Maitre d'hotel	(French) Head waiter; also a butter sauce used on fish.
Makeup	Manual or mechanical manipulation of dough to provide a desired size and shape.
Malt extract	A sirupy liquid obtained from malt mash; a product obtained as a result of converting the starch to sugar.
Marble cake	A cake of two or three colored batters swirled together so that the finished product retains the separate colors.
Marbling	The intermingling of fat with lean in meat muscles. The presence or absence of marbling can be seen on the surface of meat that has been cut across the grain. The presence of marbling indicates quality and palatability of meat.
Marinate	To cover food with a marinade (a preparation containing spices, vegetables, herbs, and a liquid, usually acid) and let stand for a period of time to enhance its flavor and improve its tenderness.
Marmalade	A thick, pulpy jam or preserve made with crushed fruits. Marmalades made of citrus fruits contain bits of the peel.
Marzipan	A confection of almonds reduced to a paste with sugar and used for modeling, masking, and torte.
Masking	To cover completely with a sauce, jelly aspic, mayonnaise, cream, icing, or frosting.
Meat substitute	Any food which may be used as an entree that does not contain beef, veal, pork, or lamb. The substitutes are protein-rich dishes such as eggs, fish, dried beans, and cheese.
Melba	A cornstarch dessert sauce most frequently used with peaches; a very thin toasted bread is called melba toast.
Melting point	The temperature at which a solid becomes a liquid.

Meringue	A white frothy mass of beaten egg whites and sugar.
Middlings	Granular particles of the endosperm of wheat which are removed during milling.
Milanaise	(French) Foods prepared a la Milanaise contain eggs, parmesan cheese, and bread crumbs. Rice and macaroni products prepared a la Milanaise may be formed into different shapes, dipped into egg batter, rolled in bread crumbs, fried; or panned and baked.
Mince	To cut or chop into very small pieces. (finer than chopped)
Minestrone	(Italian) Thickened vegetable soup containing lentils or beans.
Mixing	To unite two or more ingredients.
Mocha	A variety of flavorable coffee from Mocha (Arabia) but refers to any coffee today, including the instant form. A rich butter cream icing containing cocoa and coffee essence.
Mold	Microscopic, multi-cellular, threadlike fungi growing on moist surfaces or organic material.
Mornay	A cheese sauce used principally with baked fish.
Mousse	(French) The word means "froth." Mousse is a cold entree (meat, poultry, or seafood mousse) or a frozen dessert. The basic ingredients are beaten eggs, whipped cream, and gelatin.
Mulligatawny	(East Indian) A soup with a chicken stock base highly seasoned, chiefly by curry powder.
Myocide	An agent which destroys molds.
Napoleon	A pastry made from choux (or puff) paste rolled very thin, baked, cooled, and layered with cream filling. Usually topped with icing or confectioners' sugar.
Newburg	A dish made with a cream sauce containing egg yolks and, sometimes, wine. Customarily used with seafood.
Normandie	(French)A province of France famous for its cuisine. Dishes prepared "a la normande or normandie" contain generous amounts of butter and/or cream.

Nutrient	A substance in food which the human is known to require to support life and health.
O'Brien	A style of preparing sauteed vegetables with diced green peppers and pimientos. (Corn O'Brien and O'Brien Potatoes are examples.)
Old dough	Yeast dough that is fermentated for too long a time. It produces a baked loaf that has a dark crumb color, sour flavor, low volume, coarse grain, and tough texture.
Omelet	(or French: Omellette) Eggs cooked with yolks and whites beaten together or separately and blended, depending upon the type of omelet.
Pan Broil	To cook uncovered in a hot frying pan, pouring off fat as it accumulates.
Parasites	Organisms which live in or on a living host which they usually do not destroy.
Parboil	To boil in water until partially cooked.
Pare	To cut away outer covering.
Parfait	(French) Refers to cookery perfection but is most often associated with variously prepared desserts. The basic foundation is a sugar sirup enriched with eggs and/or cream and stabilized with gelatin. Fruits, liqueurs, or other flavorings are used with the soft mixture or with ice cream parfaits.
Parkerhouse rolls	Folded buns of fairly rich dough.
Parmesan	(Italian) A very hard cheese originating in the Parma region of Italy.
Pasta	(or Paste) (Italian) A term referring to macaroni products, including spaghetti, noodles, and other pastes made from hard wheat (durum or semolina).
Peel	To remove skin, using a knife or peeling machine.
Pepper Pot	A highly seasoned soup or stew.
Petits Fours	Small decorated squares of cake.
Pickle	A method of preserving food by a salt and water (or vinegar) solution.

Pilaf	(also Pilau) An oriental or Turkish dish made of rice. The cooking liquid used is beef or chicken stock, mildly flavored with onions.
Piquant	(French) A tart, pleasantly sharp flavor. A piquant sauce or dressing contains lemon juice or vinegar.
Poach	Method of cooking food in a hot liquid which is kept just below the boiling point.
Polonaise	(French) A garnish used on such vegetables as cauliflower, asparagus, or other dishes consisting of chopped egg and parsley. Bread crumbs may also be added.
Porcupines	A meat dish prepared with ground beef and rice, formed into balls, and baked.
Poultry terms:	
Dressed	Killed and feathers removed.
Drawn	Killed and feathers and intestines removed.
Eviscerated	Dressed, drawn, and cut-up ready to cook.
First joint	Wing joint next to carcass.
Giblets	Heart, gizzard, and liver of poultry cooked and chopped for use in gravy. The neck and wingtips may be also used as giblets.
Oyster muscle	Tender, oval dark meat which is found in recess on either side of back, above the wings.
Ready-to-cook	See eviscerated.
Second joint	The portion of the wing between the first joint and the wingtip. Also the thigh portion of the leg.
Proof box	A tightly closed box or cabinet equipped with shelves to permit the introduction of heat and humidity. Used for fermenting dough.
Proofing period	The time during which dough rises between molding and baking.
Provoloni	(Italian) A cured hard cheese which has a smoky flavor.
Puff paste	See Choux paste.

Puree	To press fruit, vegetables or other solid foods through a sieve, food mill, or blender; also a soup made with pureed foods combined with white sauce, cream, or stock.
Quahaug	(or quahog) Indian name for hard clam.
Quick breads	Bread products baked from a lean chemically leavened batter.
Rabbit	(or Rarebit) A melted cheese dish.
Rack	The unsplit rib section of lamb or veal carcass after the breast meat has been removed.
Ragout	(French) Stew.
Ravioli	(Italian) An appetizer or main dish made from meat or cheese filled noodle squares poached in a liquid and served with a tomato sauce.
Reconstitute	The process of restoring a food to its natural structure or texture as in replacing water in a dehydrated food. Also to reheat frozen prepared foods.
Rehydrate	To soak, cook, or use other procedures with dehydrated foods to restore water lost during drying.
Relish	A side dish usually contrasting in flavor, color, shape, and/or texture to the main course.
Render	To melt fat trimmed from meats by heating slowly at low temperature.
Roast	To cook by dry heat; usually uncovered, in an oven.
Rocks	Small, rough-surfaced, fruited cookies made from a stiff batter.
Rope	A spoiling bacterial growth in bread experienced when the dough becomes infected with rope spores. Usually the result of poor sanitation.
Rounding	(rounding-up) Shaping of dough pieces into a ball to seal surfaces and prevent bleeding (escape) of gas.
Roux	Mixture of flour and melted fat which is used to thicken sauces, stews, and soups.

Royal icing	Frosting of sugar and egg whites. Usually used for decorative work on pastries and cakes.
Safe holding temperatures	A range of cold and hot temperatures considered safe for holding potentially hazardous foods including refrigeration temperatures, 40° F or below, and heating temperatures, 140° F or above.
Salisbury steak	A ground meat dish cooked with onions and made to resemble steak in shape. Sometimes referred to as Hamburg Steak.
Sally Lunn	A bread used principally in the southern United States and named for the woman who is said to have first made it. It may be made either as a quick bread or raised with yeast; baked either in muffin tins or in a flat pan and cut into squares.
Sanitize	Effective bactericidal treatment of clean surfaces of equipment and utensils by an established process.
Saturation	Absorption to the limit of capacity.
Sauerbraten	(German) A beef pot roast cooked in a sour sauce variously prepared with spices and vinegar and sometimes served with sour cream.
Saute	To pan fry lightly and quickly in a very little hot fat, turning frequently.
Scald	To heat a liquid to just below the boiling point.
Scaling	(Baking term) Apportioning batter or dough according to unit of weight.
Scallop	To bake food, usually cut in small pieces with a sauce or other liquid. Topping of crumbs or shredded cheese frequently used.
Scone	A shortcake, containing raisins, which has an egg-milk wash and cinnamon topping to give a colorful, rich crust.
Score	To cut shallow slits or gashes in surface of food with knife, fork, or other implement.
Scotch Broth	A soup made with lamb stock, barley, and vegetables.
Scotch Woodcock	An egg dish baked with cheese sauce and a bread crumb topping.

Sear	To brown the surface of meat by a short application of intense heat.
Shred	To cut or tear into thin strips or pieces using a knife or shredder.
Sifting	Passing through fine sieve for effective blending, to remove foreign or oversize particles, and to aerate.
Simmer	To cook in liquid at a temperature just below the boiling point (190° F-210° F); bubbles will form slowly and break below the surface.
Single service	Refers to disposable articles used for food preparation, eating, or drinking utensils constructed wholly or in part from paper or synthetic materials and intended for one-time use.
Skewer	A wood or metal pin used to hold meat or other foods in shape while cooking.
Skim	To remove floating matter from the surface of a liquid with a spoon, ladle, or skimmer.
Slack dough	Dough that is soft and extensible but which has lost its resiliency.
Smorgasbord	(Swedish) A Scandanavian luncheon or supper served buffet style at which many different dishes are served, including hot and cold hors d'oeuvres, pickled vegetables and fish, assorted cheeses, jellied salads, fish, and meats.
Smother	To cook in a closed container or in a close mass as smothered onions.
Snaps	Small cookies that run flat during baking and become crisp on cooling.
Snicker-doodle	A coffee cake with a crumb topping.
Solidifying point	Temperature at which a fluid changes to a solid.
Souffle	(French) A delicate, spongy hot dish made principally of stiffly whipped egg whites. Cheese is commonly used, but other souffles include fish, meat, poultry, and vegetable. Also prepared as a dessert.
Spore	Any of various primitive reproductive bodies (or resistant resting cells), typically one-celled and

Spore, cont.	produced by certain forms of plant life, especially molds and bacteria, and by some animal microorganisms.
Spray drying	A method of dehydrating liquids by spraying them into a drying chamber into which very hot, dry air is circulated. The rapid evaporation causes a minimum of flavor change in the food.
Starch water	A mixture of cornstarch and water made by boiling 1 quart of water containing 1 or 2 tbsp. of cornstarch. This mixture brushed on bread dough gives a shine to the crust after baking.
Steam	To cook in steam with or without pressure.
Steep	To let stand in hot liquid (below boiling temperature) to extract flavor, color, or other qualities from a specific food.
Sterilize	To destroy micro-organisms by heat, ultraviolet light, irradiation, chemicals, or antibiotics.
Stew	To simmer in enough liquid to cover solid foods.
Stir	To blend two or more ingredients with a circular motion.
Stroganoff	A la Stroganoff is a method of preparing beef with sour cream.
Succotash	A combination dish consisting of whole-grain corn and lima beans.
Sugar	Cane or beet (sucrose)–most common, usually granulated, sweeting agent. Corn (dextrose)–a form of sugar made from cornstarch and readily fermentable. Maltose–a form of sugar obtained by germinating cereal grain. Usually supplied as a sirup. In recipes, refers to granulated unless otherwise specified.
Sukiyaki	(Japanese) A popular Japanese dish consisting of thin slices of meat fried with onions and other vegetables, including bean sprouts and served with soya sauce containing seasoning, herbs, and spices.
Taco	(Mexican) An open-face sandwich made of fried tortillas shaped like a shell and filled with a hot meat-vegetable mixture.

Tamale	(Mexican) A steamed dish made of cornmeal with ground beef or chicken rolled in the center, usually highly seasoned.
Tartar sauce	A rich sauce made with salad dressing, onions, parsley, pickle relish, and sometimes olives and cucumbers, served with seafood.
Tarts	Small pastries with heavy fruit or cream filling.
Temper	To remove from freezer and place under refrigeration for a period of time sufficient to facilitate separation and handling of frozen product. Internal temperature of the food should be approximately 26° F to 28° F.
Tetrazinni	(Italian) A dish with chicken, green peppers, and onions mixed with spaghetti and served with shredded cheese.
Texture	The structure, fineness or coarseness, of a baked product when a cut surface is examined.
Thaw	To remove from freezer and place under refrigeration until thawed. Internal temperature should be above 30° F.
Torte	Cake, especially of a rich variety; contains nuts, fruits, and usually very little or no flour.
Tortilla	(Mexican) A bread made with white corn flour and water. Special techniques are used in handling the dough to roll it thin as a pie crust. It is usually baked on hot iron.
Toss	To mix ingredients with a gentle lifting, circular motion. Usually used for salad ingredients.
Toxin	A waste product given off by a micro-organism causing contamination of food and subsequent illness in human beings.
Trichinosis	A food-borne disease transmitted through pork containing a parasite, "Trichinella spirallis," or its larvae, which infects animals.
Truss	To bind or fasten together. Usually refers to poultry.
Vacuum drying	Vacuum is applied to food which causes the air and moisture inside it to expand and create bubbles (a

Vacuum drying, cont.	puffing effect). The puffed product is then dried leaving a solid fragile mass. This may be crushed to reduce bulk.
Vermicelli	(Italian) A pasta, or macaroni product, slightly yellow in color shaped like spaghetti and very thin
Vienna bread	A hearth-type bread with heavy crisp crust, sometimes finished with seed topping.
Vinaigrette	(French) A mixture of oil and vinegar seasoned with salt, pepper, and herbs which is used in sauces and dressings.
Virus	A group of sub-microscopic organisms that grow in living tissue and may produce disease in animals and plants. Viruses are smaller than bacteria and will pass through membranes or filters.
Wash	A liquid mixture brushed on the surface of a product either before or after baking. It may be composed of one or more ingredients (water, milk, starch solution, thin sirup, or eggs).
Welsh Rabbit	(English) A cheese sauce served with toasted bread or crackers.
Whey	Liquid remaining after the removal of fat, casein, and other substances from milk.
Whip	To beat rapidly to increase volume by incorporating air; a hand or mechanical beater of wire construction used to whip materials such as cream or egg whites to a frothy consistency.
Yeast	A microscopic plant which reproduces by budding and causes fermentation and the giving off of carbon dioxide gas; leavening agent.
Young dough	Yeast dough which is under-fermented. This produces a baked product with a light color, tight grain, and low volume (heavy).
Zucchini	(Italian) Slender green squash.
Zwieback	A toast made of bread or plain coffee cake dried in a slow oven.

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OCCUPATIONAL STANDARDS

This booklet provides you with a list of the minimum qualifications for advancement to Mess Management Specialist Third and Second Class. The official source of this list is the Occupational Standards, NAVPERS 18068-D. The assignment numbers given opposite the Occupational Standards refer to the assignments in the NRCC.

MESS MANAGEMENT SPECIALIST THIRD CLASS (MS3)

25	NAVAL ORIENTATION AND ORGANIZATION	COVERED IN ASSIGNMENT
25361	Identify the general organization of Navy messes and Supply Department	1, 2, 9
25362	Identify the organization and areas of responsibility of Food Service Division	1, 2, 9
32	HEALTH CARE	
32348	Inspect food products for spoilage and dispose of spoiled items	2, 3
32349	Maintain food service, preparation, and stowage spaces and associated equipment in a clean and sanitary condition	2, 3
32380	Comply with principles of personal hygiene	2, 3
32430	Identify types, causes, and methods of preventing food-borne illnesses	2, 3
38	ADMINISTRATION	
38586	Maintain stock records	2, 3, 4
46	PUBLICATIONS	
46415	Use and maintain food service publications	2, 4
54	LOGISTICS SUPPORT	
54001	Rotate stock of food items in refrigerated spaces, bulk storerooms, and food issue rooms	4

54	LOGISTIC SUPPORT	COVERED IN ASSIGNMENT
54022	Receive, verify for quantity and quality, and acknowledge receipt of food items	3, 4
54622	Perform linen-handling functions	1
54623	Perform duties of food issue room storekeeper (Jack of the Dust)	4
54742	Prepare spaces for and assist in inventories	1, 9
65	PERSONNEL SUPPORT	
65464	Supervise maintenance of officer living quarters afloat	1
65466	Supervise maintenance of bachelor officer quarters (BOQ) and bachelor enlisted quarters (BEQ)	1
65467	Operate and clean scullery equipment	5
65468	Comply with holding temperature and time limitations for various types of food products	2, 7, 9
65469	Prepare menu items using standard recipes from the Armed Forces Recipe Service	6, 7, 9
65471	Present menu items on serving line in an attractive manner	6, 9
65472	Compute and round-off quantities of ingredients for number of food portions to be prepared based on standard recipe measures	7, 8
65474	Prepare frozen and ration dense/dehydrated food items for use	6
65475	Operate food service equipment	4, 5
65476	Arrange tables for formal and informal meals	9
65477	Stow and break-out perishables and dry food items in refrigerated spaces and storerooms	4
65478	Prepare breakouts in quantities for effective control of food items	7
65479	Prepare and serve food utilizing conservation methods	7, 9
65485	Identify functions and sources of nutrients in the diet	5, 6

98	ENVIRONMENTAL POLLUTION CONTROL	COVERED IN ASSIGNMENT
98268	Dispose of waste products with minimum effect on the environment	3

MESS MANAGEMENT SPECIALIST SECOND CLASS (MS 2)

32	HEALTH CARE	
32351	Inspect food service spaces and associated equipment for cleanliness and sanitation	1, 2, 3
32352	Ensure insect and rodent controls are carried out	3
32353	Use sanitation procedures and methods (prior to food preparation) for decontamination of spaces, equipment, and food items exposed to nuclear, biological, and chemical (NBC) agents	3
38	**ADMINISTRATION**	
38588	Maintain food service records for messes afloat and ashore, and prepare food service returns	2, 3, 4
38589	Establish work schedules for operation of a mess	2
38698	Prepare Ship's Maintenance Action Form	2
52	**FINANCIAL CONTROL**	
52002	Apply cash handling procedures for sale of meals and food items, and prepare required documents	1
54	**LOGISTICS SUPPORT**	
54003	Identify nomenclature and classification of messing items	2, 5
54624	Issue, transfer, or recommend for survey food items, and prepare expenditure documents	4
54625	Obtain and account for cooking utensils and equipment	2
54743	Prepare documents to procure food items	3, 4
54920	Expend, without survey, and dispose of spoiled food items	4

65	PERSONNEL SUPPORT	COVERED IN ASSIGNMENT
65482	Ensure safe temperature and humidity ranges are maintained for storing perishable and nonperishable food items	2, 4
65484	Plan sequence of food preparation to meet meal schedules	2
65486	Apply advanced culinary techniques (cake decorating and garnishing)	8, 9
65487	Use control techniques for recipe yield, quantity, and serving size adjustments	9
65488	Supervise mess line during serving of meals	2, 9
65489	Ensure shelf life of perishable and semiperishable food items complies with standards	4

MESS MANAGEMENT SPECIALIST 3 & 2

NAVEDTRA 10267

Prepared by the Naval Education and Training Program Development
Center, Pensacola, Florida

Your NRCC contains a set of assignments and self-scoring answer sheets (packaged separately). The Rate Training Manual, Mess Management Specialist, NAVEDTRA 10267, is your textbook for the NRCC. If an errata sheet comes with the NRCC, make all indicated changes or corrections. Do not change or correct the textbook or assignments in any other way.

HOW TO COMPLETE THIS COURSE SUCCESSFULLY

Study the textbook pages given at the beginning of each assignment before trying to answer the items. Pay attention to tables and illustrations as they contain a lot of information. Making your own drawings can help you understand the subject matter. Also, read the learning objectives that precede the sets of items. The learning objectives and items are based on the subject matter or study material in the textbook. The objectives tell you what you should be able to do by studying assigned textual material and answering the items.

At this point you should be ready to answer the items in the assignment. Read each item carefully. Select the BEST ANSWER for each item, consulting your textbook when necessary. Be sure to select the BEST ANSWER from the subject matter in the textbook. You may discuss difficult points in the course with others. However, the answer you select must be your own. Use only the self-scoring answer sheet designated for your assignment. Follow the scoring directions given on the answer sheet itself and elsewhere in this course.

Your NRCC will be administered by your command or, in the case of small commands, by the Naval Education and Training Program Development Center. No matter who administers your course you can complete it successfully by earning grades that average 3.2 or higher. If you are on active duty, the average of your grades in all assignments must be at least 3.2. If you are NOT on active duty, the average of your grades in all assignments of each creditable unit must be at least 3.2. The unit breakdown of the course, if any, is shown later under Naval Reserve Retirement Credit.

WHEN YOUR COURSE IS ADMINISTERED BY LOCAL COMMAND

As soon as you have finished an assignment, submit the completed self-scoring answer sheet to the officer designated to administer it. He will check the accuracy of your score and discuss with you the items that you do not understand. You may wish to record your score on the assignment itself since the self-scoring answer sheet is not returned.

If you are completing this NRCC to become eligible to take the fleetwide advancement examination, follow a schedule that will enable you to complete all assignments in time. Your schedule should call for the completion of at least one assignment per month.

Although you complete the course successfully, the Naval Education and Training Program Development Center will not issue you a letter of satisfactory completion. Your command will make a note in your service record, giving you credit for your work.

WHEN YOUR COURSE IS ADMINISTERED BY THE NAVAL EDUCATION AND TRAINING PROGRAM DEVELOPMENT CENTER

After finishing an assignment, go on to the next. Retain each completed self-scoring answer sheet until you finish all the assignments in a unit (or in the course if it is not divided into units). Using the envelopes provided, mail your self-scored answer sheets to Naval Education and Training Program Development Center where the scores will be verified and recorded. Make sure all blanks at the top of each answer sheet are filled in. Unless you furnish all the information required, it will be impossible to give you credit for your work. You may wish to record your scores on the assignments since the self-scoring answer sheets are not returned.

The Naval Education and Training Program Development Center will issue a letter of satisfactory completion to certify successful completion of the course (or a creditable unit of the course). To receive a course-completion letter, follow the directions given on the course-completion form in the back of this NRCC.

You may keep the textbook and assignments for this course. Return them only in the event you disenroll from the course or otherwise fail to complete the course. Directions for returning the textbook and assignments are given on the book-return form in the back of this NRCC.

PREPARING FOR YOUR ADVANCEMENT EXAMINATION

Your examination for advancement is based on the Manual of Navy Enlisted Manpower and Personnel Classification and Occupational Standards NAVPERS 18068-C (Change 8). The sources of questions in this examination are given in the Bibliography for Advancement Study (NAVEDTRA 10052). Since your NRCC and textbook are among the sources listed in this Bibliography, be sure to study both in preparing to take your advancement examination. The occupational standards for your rating may have changed since your course and textbook were printed, so refer to the latest editions of NAVPERS 18068 and NAVEDTRA 10052.

NAVAL RESERVE RETIREMENT CREDIT

The course is evaluated at 18 Naval Reserve retirement points. These points are creditable to personnel eligible to receive them under current directives governing the retirement of Naval Reserve personnel. Points will be credited in units as follows:

Unit 1: 12 points upon satisfactory completion of Assignments 1 through 6.
Unit 2: 6 points upon satisfactory completion of Assignments 7 through 9.

Credit cannot be given again for this course if the student has previously received credit for completing another Mess Management Specialist 3&2 NRCC or ECC.

Naval nonresident career courses may include a variety of items -- multiple-choice, true-false, matching, etc. The items are not grouped by type; regardless of type, they are presented in the same general sequence as the textbook material upon which they are based. This presentation is designed to preserve continuity of thought, permitting step-by-step development of ideas. Some courses use many types of items, others only a few. The student can readily identify the type of each item (and the action required of him) through inspection of the samples given below.

MULTIPLE-CHOICE ITEMS

Each item contains several alternatives, one of which provides the best answer to the item. Select the best alternative and erase the appropriate box on the answer sheet.

SAMPLE

s-1. The first person to be appointed Secretary of Defense under the National Security Act of 1947 was
1. George Marshall
2. James Forrestal
3. Chester Nimitz
4. William Halsey

The erasure of a correct answer is indicated in this way on the answer sheet:

	1 T	2 F	3	4	
s-1	■	C	■	■	

TRUE-FALSE ITEMS

Determine if the statement is true or false. If any part of the statement is false the statement is to be considered false. Erase the appropriate box on the answer sheet as indicated below.

SAMPLE

s-2. Any naval officer is authorized to correspond officially with a bureau of the Navy Department without his commanding officer's endorsement.

The erasure of a correct answer is also indicated in this way on the answer sheet:

	1 T	2 F	3	4	
s-2	■	CC	■	■	

MATCHING ITEMS

Each set of items consists of two columns, each listing words, phrases or sentences. The task is to select the item in column B which is the best match for the item in column A that is being considered. Specific instructions are given with each set of items. Select the numbers identifying the answers and erase the appropriate boxes on the answer sheet.

SAMPLE

In items s-3 through s-6, match the name of the shipboard officer in column A by selecting from column B the name of the department in which the officer functions.

A. Officers	B. Departments
s-3. Damage Control Assistant	1. Operations Department
s-4. CIC Officer	2. Engineering Department
s-5. Assistant for Disbursing	3. Supply Department
s-6. Communications Officer	

The erasure of a correct answer is indicated in this way on the answer sheet:

	1 T	2 F	3	4	
s-3	■	C	■	■	
s-4	C	■	■	■	
s-5	■	■	C	■	
s-6	C	■	■	■	

How To Score Your Immediate Knowledge of Results (IKOR) Answer Sheets

	1 T	2 F	3	4	
1	■	C	6	■	1
2	C	9	■	9	2
3	■	■	C	■	
4	CC	12	■	■	1

Total the number of incorrect erasures (those that show page numbers) for each item and place in the blank space at the end of each item.

Sample only

Number of boxes erased incorrectly	0-2	3-7	8-
Your score	4.0	[✓ 3.9]	3.8

Now TOTAL the column(s) of incorrect erasures and find your score in the Table at the bottom of EACH answer sheet.

NOTICE: If, on erasing, a page number appears, review text (starting on that page) and erase again until "C", "CC", or "CCC" appears. For courses administered by the Center, the maximum number of points (or incorrect erasures) will be deducted from each item which does NOT have a "C", "CC", or "CCC" uncovered (i.e., 3 pts. for four choice items, 2 pts. for three choice items, and 1 pt. for T/F items).

Assignment 1

The Mess Management Specialist: Food Service Division

Textbook assignment: Pages 1 - 24

In this course you will demonstrate that learning has taken place by correctly answering training questions. The mere physical act of indicating a choice on an answer sheet is not in itself important; it is the mental achievement, in whatever form it may take, prior to the physical act that is important and toward which the NRCC learning objectives are directed. The selection of the correct choice for a course training item indicates that you have fulfilled, at least in part, the stated objective(s).

The accomplishment of certain objectives, for example, a physical act such as drafting a memo, cannot readily be determined by means of objective type course questions; however, you can demonstrate by means of answers to training questions that you have acquired the requisite knowledge to perform the physical act. The accomplishment of certain other learning objectives, for example, the mental acts of comparing, recognizing, evaluating, choosing, selecting, etc., may be readily demonstrated in a course by indicating the correct answers to training questions.

The comprehensive objective for this course has already been given. It states the purpose of the course in terms of what you will be able to do as you complete the course.

The detailed objectives in each assignment state what you should accomplish as you progress through the course. They may appear singly or in clusters of closely related objectives, as appropriate; they are followed by questions which will enable you to indicate you accomplishment.

All objectives in this course are learning objectives and questions are teaching questions. They point out important things, they assist in learning, and they should enable you to do a better job for the Navy.

The nonresident course is only one part of the total Navy training program; by its very nature it can take you only part of the way to a training goal. Practical experience, schools, selected reading, and the desire to accomplish are also necessary to round out a fully meaningful training program.

Learning Objective: Recognize the duties and responsibilities of the Mess Management Specialist rating.

1-1. What are the two types of ratings in the present enlisted rating structure?
1. General and emergency
2. Service and emergency
3. Service and general
4. Occupational and specialities

1-2. A general rating is one which reflects qualification in which of the following?
1. Civilian skills identified with a wartime Navy
2. Civilian skills identified with a peachtime Navy
3. Broad occupational fields of related duties and functions
4. Subdivisions or specialties within broad occupational fields

1-3. At what petty officer levels are service ratings most common?
1. PO 3 & 2
2. PO 2 & 1
3. PO 1 & C
4. At all of the above levels

1-4. You should discuss an individual's personal financial affairs with someone else when required to do so by official business.

Learning Objective: Specify the requirements for advancement, and how the Navy's advancement system functions.

1-5. In preparing for advancement, you should recognize that the requirements for petty officers emphasize which of the following?
1. Skill in performing your job
2. Supervision and direction of others
3. The ability to perform new jobs
4. All of the above

1-6. You must pass a MILITARY/LEADERSHIP examination to qualify for advancement to which of the following rates?
1. All petty officer rates
2. CPO, SCPO, and MCPO
3. PO1 and CPO
4. PO3 and PO2

1-7. Which of the following is NOT required to qualify for advancement in rating?
1. Being recommended by your commanding officer
2. Having sea service
3. Demonstrating your ability to perform all the practical requirements
4. Passing a written examination

1-8. When the number of vacancies in a rate and rating is less than the number of persons meeting all requirements for advancement, those advanced are selected on the basis of
1. final multiple score
2. longevity
3. test results
4. performance evaluation

1-9. The final multiple system that is used in the Navy is a combination of which of the following?
1. Merit rating, personnel testing, and longevity systems
2. Merit rating and personnel testing systems
3. Personnel testing and lengevity systems
4. Merit rating and longevity systems

1-10. Accomplishing which of the following help to increase the probability of your being selected for advancement?
1. Accepting greater responsibility
2. Learning more about your job
3. Developing more skill in your job
4. All of the above

1-11. As you prepare for advancement in rating, you should refer to which of the following publications?
1. The OCCS Standards
2. The Bibliography for Advancement Study
3. Mess Management Specialist Rate Training Manual
4. All of the above

1-12. As you begin a period of study for advancement, you should first refer to the Occupational Standards because they
1. contain a list of appropriate study material
2. contain the requirements on which you will be tested
3. offers valuable study hints
4. list the sources used to develop the advancement exam

1-13. If you are preparing yourself to take the examination for advancement to MS2 you should study all occupational material applicable to
1. pay grades E-4 and E-5
2. pay grade E-5 only
3. pay grade E-4 only
4. pay grades E-4 through E-9

1-14. The examinations on military/leadership qualifications for advancement to MS3 are
1. provided by a separate Navywide examination
2. included with the occupational examination questions
3. prepared and administered locally
4. taken at the same time that practical factors are completed

1-15. The NAVTRA 1414/1 provides a record of
1. prior advancement examination results
2. your proficiency in each previous rate
3. satisfactorily completed practical factors
4. schools and training manuals satisfactorily completed

Learning Objective: Recognize application and uses of reference material available for advancement study.

Questions 1-16 through 1-18, refer to publications directly related to qualifications and preparation for advancement. Select the publication from column B that contains the information listed in each question in column A.

	A. Information	B. Publication
1-16.	Listings of all training manuals and correspondence courses published by the Navy	1. NAVTRA 10052 2. NAVTRA 10061 3. Rate training manuals
1-17.	Specific information pertaining to performance of the duties of a rating	
1-18.	A list of training manuals and references that should be studied when preparing for advancement	

1-19. By which of the following methods may you complete a mandatory rate training manual?
1. By completing an appropriate Navy school
2. By passing the nonresident career course for the mandatory training course
3. By passing a local test covering the mandatory course
4. By each of the above methods

Learning Objective: Recognize the responsibilities for the enlisted dining facility that are assigned to the commanding officer, the executive officer, and the medical officer.

1-20. Who sets the usual dining hours aboard ship?
1. Commanding officer
2. Executive officer
3. Operations officer
4. Food service officer

1-21. The officer responsible for estimating the number of men to be fed daily is the
1. supply officer
2. executive officer
3. officer of the deck
4. medical officer

1-22. Which of the following duties is the responsibility of the medical officer?
1. Supervising the preparation of food
2. Inspecting the food that is to be served
3. Issuing ration credits
4. Approving the weekly bill of fare

1-23. How often does the medical department examine food service personnel and conduct inspections of food storage spaces for cleanliness?
1. Daily
2. Weekly
3. Biweekly
4. Monthly

Learning Objective: Specify the responsibilities of the food service officer and the supply officer for the dining services aboard ship.

1-24. Operation of the dining facility requires: (A) record keeping; (B) assigning of personnel; (C) supervision of food service; and (D) inspection of food storage and preparation spaces. Which of the above responsibilities are assigned to the supply officer?
1. C and D only
2. A and B only
3. A, B, and D only
4. A, B, C, and D

1-25. On small ships which have no Supply Corps officer aboard, to whom does the commanding officer usually assign the responsibility of running the dining facility?
1. The Senior MS
2. The medical officer
3. A senior cook
4. A line officer

At an activity large enough to require both a supply and a food service officer, the duties are divided. In questions 1-26 through 1-29, select from column B the officer who normally performs each function in column A.

A. Function

1-26. Submission of Navy Stock Account returns for subsistence

1-27. Accountability for subsistence items issued to the enlisted dining facility

1-28. Supervision of planning, preparation, and serving of meals

1-29. Procurement of subsistence items

B. Officer

1. Supply officer
2. Food service officer

1-30. The supply department instructions that explain the duties of each billet in the food service division aboard a carrier are prepared by the
1. leading MS
2. food service officer
3. galley captain
4. supply officer

Learning Objective: Determine the types of officers' dining facilities afloat, their general organization, and the responsibilities of officers assigned to the operation.

1-31. By what authority are commissioned officers' dining facilities afloat established?
1. Naval Supply Systems Command
2. U.S. Navy Regulations
3. Navy Food Service Systems Office
4. Bureau of Naval Personnel Instructions

1-32. Which of the following officers' dining facilities may be established afloat?
1. Flag only
2. Cabin only
3. Wardroom only
4. Flag, cabin and wardroom

1-33. Who may be invited to join a flag dining facility?
1. Ship's officers
2. Commanding officer of the ship only
3. Officers of the staff
4. Any officer

1-34. Which one of the following officers is most likely to take his meals in a cabin dining facility?
1. Flag officer for a carrier division
2. Commanding officer of a cruiser
3. Commanding officer of a destroyer
4. Warrant officer on a cruiser

1-35. When a wardroom is divided into two parts, all of the members in one of those parts normally will be
1. staff officers
2. junior officers
3. warrant officers
4. marine officers

1-36. What type of dining facility may be established when there are a sufficient number of officers assigned to a ship and the facilities are available?
1. Staff
2. Line officers
3. Marine
4. Warrant officers

Learning Objective: Determine the types of dining facilities ashore. Identify the general organization and the responsibilities of the personnel assigned to the operation of the dining facilities.

1-37. What are the two types of officers' dining facilities ashore?
1. BOQ and BEQ
2. Senior and junior
3. Closed and open
4. Staff and command

1-38. Closed and open dining facilities ashore are under the technical control of the
1. Navy Facilities Engineering Command
2. Bureau of Naval Personnel
3. Bureau of Medicine and Surgery
4. Naval Supply Systems Command

1-39. The primary function of CLOSED dining facilities is to provide
1. lodging and recreational facilities
2. subsistence and social facilities
3. lodging and subsistence facilities
4. social and recreational facilities

1-40. Services that a commissioned officers' dining facility (closed) may provide include which of the following?
1. Essential lodging and food
2. Laundry and dry cleaning
3. Barber and beauty shops
4. All of the above

1-41. Ashore, the subsistence items used in the officers' dining facility are paid for by
1. appropriated funds
2. profits through the sale of meals
3. ship's store profits
4. the enlisted dining facility

1-42. The following categories of officers may be assigned to quarters:
A. Inactive officers of the Scheduled Reserve performing scheduled inactive duty training
B. Officers not drawing BAQ (except officers in travel status).
C. Officers drawing BAQ whose dependents did not accompany them (except officers in a travel status).
D. Officers in a travel status

Select the sequence from those given below which indicates the priority normally used in making the assignments to quarters.
1. C, A, B, D
2. C, D, A, B
3. B, C, D, A
4. D, B, C, A

1-43. Quarters consisting of bedroom, living room, and bath are normally assigned to an officer who is
1. permanently assigned and is a LT or above
2. in a travel status and is a LT or above
3. permanently assigned and is a LTJG or above
4. in a travel status and is a LTJG or above

1-44. Who is responsible for registering a new officer into the BOQ?
1. Manager
2. Front desk watch
3. Messenger
4. Senior MS

1-45. Seeing that a newly registered officer is informed about BOQ operations schedules is a duty of the
1. desk watch
2. messenger
3. advisory group
4. manager

1-46. A ready reference to all registered officers and their room numbers is provided by the
1. room
2. registration card
3. information rack
4. file of orders

1-47. When a special delivery letter is received for an officer registered at the facility, a messenger should be sent as soon as possible to locate the officer.

1-48. As petty officer of the watch, you are expected to handle most complaints dealing with services or facilities. However, you should report to the treasurer any officers who expressed dissatisfaction with
1. schedules
2. personnel
3. meals
4. quarters

In questions 1-49 through 1-55, select the answer from column B which indicates when the jobs listed in column A are normally performed.

	A. Stateroom duties	B. Frequency
1-49.	Issue linens, bed sheets, towels, and pillow cases	1. Daily 2. Weekly
1-50.	Sweep and swab deck	3. As needed
1-51.	Clean knife edges of the hatch	
1-52.	Clean up, following repairs to fire main	
1-53.	Clean washbasins	
1-54.	Scrub paintwork	
1-55.	Empty wastebaskets	

1-56. When should you count the change fund?
1. Before placing it in the cash register
2. At the close of business
3. At least once during the watch
4. Before signing the receipt

1-57. Where should the key which enables you to read the register totals be kept?
1. It should remain in the cash register
2. The treasurer should retain it.
3. The cashier should retain it
4. It should be passed between watch supervisors

1-58. One of the cash register keys locks the cash register mechanism and the cash drawer. Where should this key be kept?
1. Retained
2. Passed
3. Left
4. Both 2 and 3 are correct

1-59. After the close of business and after all money has been collected, the money drawer of the cash register should be
1. locked
2. closed
3. left open
4. removed

1-60. You are the cashier at an officers' dining facility. What is the first thing you should do after the customer hands you the payment for his bill?
1. Carefully note the amount of money given you
2. Verify the addition on his bill
3. Count out the correct change
4. Ask the customer how much he gave you

1-61. What is the main reason for your repeating aloud the amount of money that the customer hands you?
1. To avoid confusion as to the amount tendered
2. To warn the customer that you can't be shortchanged
3. To demonstrate your efficiency
4. To do both 2 and 3 above

1-62. As you complete giving change for five dollars to a patron, he claims that he gave you ten dollars. You will know whether or not you made a mistake if
1. you count the change again
2. you repeated aloud the amount he gave you
3. the bill he gave you is still on the change plate
4. the cash drawer is still open

1-63. The customer hands you $5 to pay his bill of $2.83. In counting out the change, you would first pick up
1. two dollar bills and count, "Two eighty-three, three eighty-three, four eighty-three"
2. a dime and count, "Two eighty-three, two ninety-three"
3. a nickel and count, "Two eighty-three, two eighty-eight"
4. Two pennies and count, "Two eighty-three, two eighty-four, two eighty-five"

1-64. After each transaction is completed, what should be done to the cash register drawer?
1. It should be left open
2. You should count the change fund
3. It should be closed but not locked
4. It should be closed and locked

1-65. Who appoints the members of the wardroom auditing board?
1. BUPERS
2. NAVSUP
3. Executive officer
4. Commanding officer

1-66. Which of the following officers usually acts as president of the wardroom dining facility aboard a small ship?
1. Commanding officer
2. Executive officer
3. Officer of the deck
4. Treasurer

1-67. How is the treasurer of a wardroom dining facility designated?
1. He is elected by the members
2. He is appointed by the president
3. He is appointed by the commanding officer
4. He is assigned the duty by the Bureau of Naval Personnel

1-68. Which of the following officers may NOT serve as treasurer of the wardroom dining facility?
1. Operations officer
2. Ship's navigator
3. Disbursing officer
4. Ship's store officer

1-69. Who decides the length of time the treasurer of a dining facility may serve in that capacity?
1. President
2. Audit board
3. Inventory board
4. Commanding officer

1-70. All of the following are assigned to the officers' dining facility. Which one is responsible for menu planning, procurement and preparation of subsistence items, and the serving of meals?
1. Treasurer
2. Caterer
3. President
4. Senior MS

1-71. When a ship's wardroom does not have both a treasurer and a caterer, who is responsible for all operations of the officers' dining facility?
1. Caterer
2. Treasurer
3. President
4. Supply officer

1-72. On a large ship, what is the title of the officer whose primary duty is the operation of the officers' dining facility?
1. Treasurer
2. Wardroom supply officer
3. Wardroom officer
4. President

1-73. Functions of the audit board include which of the following?
1. Inventorying the treasurer's cash
2. Inventorying the stock
3. Auditing the treasurer's accounts
4. All of the above

Assignment 2

Food Service Division; Health Care and Sanitation

Textbook assignment: Pages 24 - 44

Learning Objective: Identify the duties of the MS in the operation of the dining facility.

2-1. Who serves as a dining hall master-at-arms in the enlisted dining facility?
1. A man detailed by the executive officer and directly responsible to him
2. A man detailed by the food service officer and directly responsible to the senior MS
3. An officer assigned to the duty by the CO
4. A man detailed by the executive officer and directly responsible to the chief master-at-arms

2-2. The job of keeping the dining area and scullery sanitary at all times is supervised by the dining hall master-at-arms and performed by the
1. food servicemen
2. issue room storekeeper
3. MS striker
4. vegetable room personnel

2-3. Who is directly responsible for maintaining order in the dining hall during the serving of the meal?
1. Chief Ship's Serviceman
2. Head food servicemen
3. Issue Room Storekeeper
4. Dining hall master-at-arms

2-4. Which of the following statements is NOT true in regard to food servicemen?
1. They are detailed for food service duty
2. They are normally non-rated personnel
3. They are under the supervision of the dining hall master-at-arms
4. They may prepare but not actually serve the food

2-5. The food service division stock records are usually kept by the
1. Chief MS
2. food servicemen
3. personnel of storekeeper ratings
4. issue room storekeepers

2-6. The issue room storekeeper on a large ship is in charge of the
1. cold storage room
2. the scullery
3. the subsistence issue room
4. the records section

2-7. How often must the temperature readings from the cold storage space be reported to the senior MS?
1. Once a day
2. Twice a day
3. Every other day
4. Once a week

2-8. Which of the following is NOT one of the duties of the senior MS?
1. Requesting needed repairs on equipment
2. Preparing public vouchers for subsistence items
3. Preparing and signing the Menu (NAVSUP Form 1080)
4. Mustering galley personnel and inspecting them for cleanliness of person and clothing

2-9. If the senior MS suspects that food is spoiled, the food cannot be used until the condition of the food is reported to and inspected by the
1. food service officer and the dining hall master-at-arms
2. supply officer and food service officer
3. medical officer and food service officer
4. supply officer and medical officer

2-10. Which of the following would normally perform the duties of galley supervisor aboard ship?
1. MS1
2. MS2
3. MS3
4. MSSN

2-11. Who is usually designated as watch captain for the Food Service activities?
1. The galley supervisor
2. The senior MS on watch
3. The Chief MS
4. The dining hall master-at-arms

2-12. Who carries out the following duties: sees that the prescribed recipes are available and followed; instructs personnel in safety regulations and requires their observance; supervises the vegetable preparation personnel; and sees that sanitary practices are followed?
1. The supply officer
2. The watch captain
3. The dining hall master-at-arms
4. The senior cook

In questions 2-13 through 2-15, select from column B the person responsible for preparing the food in column A.

	A. Food	B. Person
2-13.	Vegetables for salad	1. Watch captain
2-14.	Ice cream	2. Senior baker
2-15.	Bread and rolls	3. Vegetable preparation supervisor

2-16. The watch system for the MS working in the galley usually follows a watch routine of
1. 4 hours on; 12 hours off
2. 6 hours on; 12 hours off
3. 12 hours on; 12 hours off
4. 24 hours on; 24 hours off

Learning Objective: Recognize the responsibilities of the dining facility supervisory staff and the characteristics of a good supervisor.

2-17. The primary difference between the responsibilities of an MS3 and the responsibilities of an MSSN is that the MS3
1. has the responsibility for work performed by others
2. has a greater number of routine tasks to perform
3. does not need to know how to perform routine jobs
4. personally performs most jobs for which he is responsible

2-18. The operation of a dining facility afloat or ashore involves many different jobs. Successful supervision of subordinate personnel in carrying out the responsibilities assigned to them requires that the supervisor should
1. consider personnel strength
2. prepare a complete organization chart
3. determine the time needed for each job
4. have a clear understanding of the job

2-19. Knowledge of which of the following is of the least importance when you are assigning jobs to your men?
1. Time available to do the job
2. Men available for the job
3. Time in rate of the men available
4. Skills of the men available

2-20. Less planning is usually required for routine, recurring jobs than is required for special or occasional jobs. This is true because the routine jobs
1. are easier
2. can be included in permanent work assignments
3. are performed less frequently
4. are assigned to your most dependable men

2-21. You are the watch supervisor and you have two separate jobs which are to be completed before lunch. Two experienced and two inexperienced men are available for assignment. How should these men be assigned to best use their time and abilities?
1. Assign both jobs to the experienced men so you can conduct a training session for the inexperienced men
2. Assign one job to the experienced men so you can constantly supervise the inexperienced men on the other job
3. Assign one experienced and one inexperienced man to each job and observe their progress
4. Assign both experienced men to one job and perform the second job yourself while the inexperienced men observe you

2-22. Why does a good supervisor rotate his men from job to job?
1. Rotating the men prevents them from forming careless work habits
2. The men would learn ways to escape work if they remained too long on one job
3. Rotation gives the men a chance to learn all phases of MS work
4. All of the above reasons are sound

2-23. A practical way to provide equitable work distribution is to
1. let each man choose his own work assignment
2. assign men only to the jobs for which they are qualified
3. ensure that all men work exactly the same number of hours
4. rotate work assignments

2-24. The amount of training needed by a man who is assigned to a new job would be largely determined by which of the following?
1. Your workload
2. His experience
3. Time available
4. His attitude

2-25. Occasionally, it may be necessary for you to do a particular job yourself rather than assign it to your men. When would this be justified?
1. If it is a rush job
2. If it is easier to do it yourself rather than train someone for the job
3. If you do not have time to train your men
4. If you can do a better job than your men

2-26. Why should you closely observe a man's performance while he is learning a new job?
1. You can reassign him if he has difficulty learning the job
2. You can immediately correct any mistakes he might make
3. You will have sufficient information if it becomes necessary to reprimand him
4. He will be constantly aware of your supervision

2-27. When a new man "gets off to a good start", which of the following would probably result?
1. Many unnecessary mistakes would be avoided
2. He would have increased confidence in himself
3. He would be able to learn the next job more quickly and easily
4. All of the above

2-28. What should you say to the man who is making good progress in his new job?
1. Nothing. Save your comments until he does something wrong
2. Nothing at this time. Make any comments after he has mastered the job
3. Explain the areas in which he needs to improve
4. Tell him his progress is good

2-29. What is the purpose of criticizing poor performance?
1. To improve the performance
2. To make an example of the poor performer in order to prevent poor work in the future
3. To make it clear to subordinates that you know how things should be done
4. To remind subordinates that you are watching them and judging their work

2-30. Of the many jobs performed by your men, which ones should you inspect as they are completed?
1. Only the more important ones
2. All of them
3. About half of them, chosen at random
4. Those designated by the treasurer

2-31. What should you do when a man reports his job as being completed and you find several discrepancies?
1. Watch the man closely in the future
2. Do it yourself since that is quicker
3. Have the man correct his mistakes
4. Reassign the job to a more dependable man

2-32. When you are reviewing the work of your personnel you should always try to
1. evaluate each member quickly and move on to more important work
2. watch each member perform the tasks once or twice as this will be a fair indication of their usual performance
3. watch all the members as they work together so you can compare their performance
4. evaluate each member on the basis of many performances

Learning Objective: Indicate the frequency with which inspections are made and the reasons for the various officers' dining facility inspections.

2-33. Material inspections of the wardroom dining facility are primarily concerned with which of the following?
1. Condition of the equipment and spaces
2. Adequacy of menu planning
3. Quality of meal preparations
4. All of the above

2-34. How frequently are administrative inspections normally held?
1. Monthly
2. Quarterly
3. Semiannually
4. Annually

2-35. Which type of inspection includes an inspection of food service personnel?
1. Medical
2. Material
3. Relief of the treasurer
4. Audit and inventory board

Learning Objective: Differentiate between the various material classifications, specify the purpose(s) for which various inventories are taken, and identify the uses made of inventory results.

Questions 2-36 through 2-41 are concerned with material classification. Procurement restrictions, custodial requirements, and methods of expenditure are usually determined by the type of material involved. Select the appropriate material classification from column B for each item of material listed in column A.

	A. Material	B. Material classification
2-36.	Serving jackets	1. Installed equipment
2-37.	Dough mixer	2. Controlled equipage
2-38.	Water tumbler	3. Consumable supplies
2-39.	Typewriter	
2-40.	Fire extinguisher	
2-41.	Deep fat fryer	

2-42. Which of the following determines whether or not items are designated as controlled equipage?
1. Their cost
2. Their vulnerability to pilferage
3. Their essentiality to the ship's mission
4. All of the above

2-43. What distribution is made of the NAVSUP Form 306 after it has been prepared for an item of controlled equipage?
1. Original to the custodian, copy retained in the supply office
2. Original and copy retained in the supply office
3. Original retained in the supply office, copy to the custodian
4. Original and copy to the custodian

2-44. What custody or control, if any, is usually maintained for consumable supplies?
1. Reasonable safeguards are taken against unauthorized use
2. Safeguards similar to that required for controlled equipage
3. Memorandum records are kept
4. None

2-45. Why are consumable supplies in use normally inventoried?
1. To reestablish accountability
2. To determine replacement needs
3. To update stock record cards
4. To update checklists

2-46. Consumable supplies in the storeroom are considered to be dining facility assets only
1. if they were charged to the ship's operating funds
2. during the month purchased
3. if they were purchased with wardroom funds
4. if they are recorded on stock record cards

2-47. Controlled equipage inventories are normally taken and recorded on the
1. stock record cards
2. duplicate custody cards
3. COSAL
4. individual space checklists

2-48. You are assisting the treasurer in the controlled equipage inventory. One of the items is determined to be no longer serviceable. What action should the treasurer take?
1. Inventory the item as is
2. Requisition a replacement item
3. Initiate a survey request
4. Destroy the custody record for that item

Learning Objective: Identify the various reports and records used in officers' dining facilities afloat and ashore.

2-49. Afloat, the records which you are most likely to keep are those which reflect
1. food costs
2. the value of members' shares
3. checking account transactions
4. the value of commuted rations

2-50. Stock record cards provide a running inventory of storeroom items. It also provides which of the following?
1. A record of menus served
2. Total food cost for the month
3. The quality of an item needed for each meal
4. Usage information

2-51. The senior MS in charge of the wardroom is preparing the menu for the following week. He is planning one meal which is to feature a seafood platter IF there are enough shrimp and oysters in the reefer. What is the quickest source of this information?
1. The stock record cards
2. The latest inventory
3. Previous menus
4. The galley worksheet

2-52. The anticipated use and storage life of individual food items are major factors in determining
1. storeroom size
2. food costs
3. stock levels
4. menu ingredients

2-53. The actual cost of meals served is determined by
1. costing the menu
2. recording issues to show a cumulative total
3. careful menu planning
4. proper preparation of the galley worksheet

2-54. The first in first out method of pricing issues is shown in Figure 2-4 of the text. According to the stock record in Figure 2-4 , how many cases of tomato juice remain to be issued at $2.45 per case?
1. 5
2. 6
3. 7
4. 8

Learning Objective: Recognize the characteristics, causes, symptoms, and prevention of food-borne illnesses.

2-55. What new problems in the prevention of food-borne illnesses have new types of warfare presented?
1. Protection of food supplies from bacterial agents used as weapons
2. Decontamination of foods subjected to nuclear fallout
3. Decontamination of food supplies affected by chemical warfare agents
4. All of the above

2-56. How are bacteria classified?
1. By their shape
2. By the number of times they multiply
3. By the symptoms they produce
4. By the damages they cause

2-57. Most food poisoning is caused by bacteria called staphylococcus (called "staph" for short). Staphylococcus bacteria are found in which of the following?
1. Pimples only
2. Pimples and nose drip only
3. Nose drip and infected cuts only
4. Pimples, nose drip, and infected cuts

2-58. Which of the following foods is more likely to carry an agent of poisoning than an agent of infection?
1. Roast veal
2. Baked fish
3. Macaroni salad
4. Cured meats

2-59. Bacteria that cause three of the following food-borne illnesses are frequently carried by food service personnel who have infections, colds, or infected sores. Which one may be present in improperly preserved canned food?
1. Staphylococcus food poisoning
2. Botulism
3. Bacillus dysentery
4. Salmonellosis

2-60. Striker Payne is opening canned, green beans. He finds a bulging can but cannot smell or see anything wrong with its contents. He should
1. test the flavor by tasting a few beans
2. add the beans to the others he is using but be sure the food is heated to a full boil before it is served
3. assume the food is unsafe
4. call on the chief MS to check the condition of the beans

2-61. If cases of salmonellosis result from eating food that was well cooked, the food must have been infected at what point?
1. After it was cooked
2. Before it was cooked
3. During the time it was cooked
4. During the preparation for cooking

2-62. Which of the following diseases is most often caused by serving rare pork chops?
1. Dysentery
2. Diarrhea
3. Trichinosis
4. Meningitis

2-63. Food items which are served chilled and moist, such as celery, lettuce, fresh fruits, or fresh vegetables might carry a disease or infection known as
1. Amoebic dysentery
2. Trichinosis
3. Salmonellosis
4. Streptococcus

In questions 2-64 through 2-67 select from column B the type of chemical poisoning that could result from each practice in column A.

A. Practice

2-64. Using an old leaking mechanical refrigerator

2-65. Serving apple salad made from unpeeled fruit

2-66. Serving lemonade that has stood in metalplated pitchers for several hours

2-67. Storing roach powder in the galley

B. Poisoning

1. Cadmium poisoning
2. Lead poisoning
3. Methyl chloride poisoning
4. Fluoride poisoning

Learning Objective: Identify the methods used to protect foods from bacterial spoilage by the use of heat, pasteurization, cooking, dehydration, smoking and refrigeration. (continued in assignment 3).

2-68. Which of the following temperatures would kill bacteria in the shortest time?
1. 140°F
2. 150°F
3. 160°F
4. 170°F

In questions 2-69 through 2-71 select from column B the process that produces each result described in column A.

A. Results

2-69. Destruction of most bacteria and retarding of spoilage

2-70. Killing of harmful bacteria in milk and pickles

2-71. Conditioning the food so that bacteria cannot multiply

B. Process

1. Pasteurizing
2. Dehydrating or smoking
3. Cooking

Assignment 3

Health Care and Sanitation (Continued); Procurement and Storage

Textbook Assignment: Pages 44 - 67

Learning Objective (Continued): Identify the methods used to protect foods from bacterial spoilage by the use of heat, pasteurization, cooking, dehydration, smoking, and refrigeration.

3-1. Bacteria do not multiply in dehydrated foods which have not been reconstituted because
1. the storage temperature is controlled
2. they are poor food for bacteria
3. the moisture content is low
4. the sugar content is low

3-2. Which of the following rules would NOT apply when you are training strikers in the proper use of the refrigerator to prevent food spoilage?
1. All opened, packaged foods should be kept in the refrigerator
2. Always allow for free circulation of air in the refrigerator
3. Always cover food containers in the refrigerator
4. Avoid overcrowding and stacking of foods

3-3. You are preparing food and have to sneeze. What should you do?
1. Block the sneeze with a handkerchief, then continue cooking
2. Cover your nose and mouth with your hand until the urge to sneeze has passed
3. Block the sneeze with your handkerchief, then wash your hands
4. Turn your head away from the food while you sneeze, then continue cooking

3-4. What part of your body provides one of the most common means of transmitting germs?
1. Hands
2. Nose
3. Face
4. Feet

3-5. Why do you transfer a sample of food from a dipping spoon to a separate spoon before you check the food for taste?
1. To allow the food to cool
2. To prevent contaminating the dipping spoon
3. To prevent mixing of flavors
4. To avoid burning your mouth on the hot spoon

3-6. Which of the following habits should you avoid at all times?
1. Putting your fingers in your mouth
2. Scratching your head
3. Rubbing your ear
4. All of the above

Learning Objective: Recognize the need and importance of personal hygiene in the prevention of food-borne illnesses.

3-7. An outbreak of food-borne disease aboard ship is likely to be caused by which of the following?
1. Poor refrigeration of food
2. Careless handling of the food
3. Preparation of food too far in advance
4. Each of the above

3-8. An MS striker keeps a leftover roast of beef on a table for 45 minutes one afternoon while he is cleaning the refrigerator. He has it out of the refrigerator for another half hour the next day while making sandwiches. How much longer can he safely keep the roast out of the refrigerator?
1. 1 hr
2. 1 hr and 45 min
3. 2 hrs and 45 min
4. 3 hrs and 45 min

3-9. What is the maximum depth to which leftovers should be stored in refrigerator containers?
1. 1 in.
2. 2 in.
3. 3 in.
4. 4 in.

3-10. Assume that some leftover meat has been chilled and stored in the refrigerator for approximately 12 hours. After how many additional hours of refrigerated storage would it be unsafe for use?
1. 12
2. 24
3. 30
4. 48

3-11. How should leftover frozen foods be handled?
1. They should be refrozen
2. They should be discarded
3. They should be stored under 40°F
4. They should be kept in covered containers at room temperature

3-12. Why do bacteria spread more rapidly through meat that has been frozen and thawed than in meat that has not been frozen?
1. Freezing dries out the tissues
2. Freezing hardens the tissues
3. Freezing breaks down the tissues
4. Freezing strengthens the bacteria

3-13. Proteins foods should be considered unsafe for consumption if they are held at temperatures between 40°F and 140°F for more than
1. 1/2 hr
2. 1 hr
3. 2 hr
4. 3 hr

3-14. Which of the following precautions should be observed when you are handling food?
1. Do not use your hands when preparing or serving butter, doughnuts, bread, and other similar items of food
2. Don't cough, sneeze, or talk over food while it is being prepared or served
3. Don't smoke while preparing food
4. All of the above

Learning Objective: Recognize the correct procedures for cleaning and sanitizing dishes and utensils by the use of hand dishwashing methods.

3-15. What type of food deposit is most difficult to remove from galley equipment?
1. Dried
2. Baked
3. Burned
4. Built-up

3-16. You clean utensils more easily with water that is heated to a temperature of 100°F instead of only to 125°F because the higher temperature helps
1. dissolve dirt
2. kill bacteria
3. loosen the deposits
4. increase the effectiveness of detergents

3-17. Which of the following procedures should NOT be observed when you are washing dishes and utensils?
1. Always use soap, rather than detergent
2. Never use dishcloths or dishmops
3. Use brushes which can be sanitized
4. Leave the dishes and utensils on the drain board to air dry

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Learning Objective: Perceive the correct procedures for maintaining garbage and trash disposal and for effective pest control.

3-18. How often should you clean the garbage collection areas, and garbage and refuse cans?
1. At the end of each meal
2. At the end of each day
3. At the end of each watch
4. At the end of the week

3-19. What is the objection to dumping garbage overboard during hostilities?
1. The garbage should not be wasted
2. The garbage will attract scavengers
3. The garbage will interfere with radar operation
4. The garbage may help an enemy determine the location of your ship

3-20. Why must care be exercised in the use of poison baits for rodent control?
1. They are expensive
2. They may poison humans
3. They deteriorate rapidly
4. They produce odors

Learning Objective: Identify the responsibilities of personnel and the proper methods for decontaminating food service spaces, equipment, personnel and subsistence items.

3-21. What method is used to decontaminate items exposed to radioactivity?
1. Chemical neutralization
2. Physical removal of the radioactive material
3. Sterilization
4. Cooking

3-22. Subsistence items should be monitored in their dry state because dilution with water does what?
1. Lowers the beta readings
2. Damages the radiac instruments
3. Provides additional contamination
4. Raises the alpha readings

3-23. Gross decontamination may be used to remove radioactive materials from which of the following?
1. Galley personnel
2. The galley deck
3. Dining spaces
4. The water supply

3-24. For what purpose(s), if any, can water contaminated by radioactivity be used in decontamination procedures?
1. It cannot be used for any decontamination purposes
2. It can be used only to wash decks
3. It can be used to wash surfaces more heavily contaminated than the water
4. It can be used for all gross decontamination procedures

3-25. Which of the following cleaning solutions could you use if you lack a cleaning agent specifically designed for decontaminating galley surfaces?
1. Vinegar and detergent in hot water
2. Trisodium phosphate, general purpose detergent, and hot water
3. Chlorine bleach, general purpose detergent, and cold water
4. Citric acid, trisodium phosphate and hot water

3-26. All foods which have been contaminated must be inspected and approved before they are served by the
1. executive officer
2. supply officer
3. food service officer
4. medical officer

Learning Objective: Identify decontamination procedures for radiological decontamination.

3-27. The steps you would use to decontaminate metal surfaces, metal utensils, and dinnerware which have been exposed to radiological contamination include (A) flush with water, (B) scrub with alkaline detergents, (C) rinse with water, and (D) apply citric acid solution or vinegar. In what order should the preceding steps be performed?
1. A, B, C, D
2. A, B, D, C
3. A, D, C, B
4. B, A, D, C

3-28. Which of the following types of dinnerware may be difficult to decontaminate?
1. Metal
2. Glass
3. Plastic
4. Crockery

3-29. What should you do with a cracked dish that has been contaminated by radioactivity?
1. Dispose of it
2. Wash it repeatedly
3. Wash it with detergent and treat it with acid
4. Put it aside until the radioactivity has subsided

3-30. How should you identify an area that has been recontaminated?
1. Rope it off
2. Paint it red
3. Cover it with canvas
4. Draw a chalk line around it

● Questions 3-31 through 3-33 are statements concerning radiological decontamination. Check them True or False.

3-31. Men on decontamination duty should wear masks and clothing that covers all skin areas.

3-32. Personnel are monitored before beginning decontamination duty.

3-33. Protective garments worn during decontamination duty should be laundered before being stored away.

Learning Objective: Identify preventive measures and decontamination procedures for which you will be responsible in the event of a biological attack.

3-34. Weapons of biological agents differ from conventional weapons in that biological weapons

1. harm civilians
2. do not cause death
3. damage only plants, animals, and persons
4. work only in hot climates

3-35. What decontaminant, if available, would you use for the biological decontamination of galley and dining spaces?

1. Chlorine
2. Formalin
3. Citric acid
4. Sodium phosphate

3-36. What disadvantages do both formalin and freon-ethylene oxide have as decontaminants?

1. Toxicity
2. Corrosiveness
3. Explosiveness
4. Odor

3-37. What solution is preferred for the final flushing of internal surfaces that are being decontaminated after a biological attack?

1. Phenol
2. Chlorine
3. Formalin
4. Iodophors

3-38. One of the easiest ways to decontaminate small items that can be immersed is to

1. expose them to formalin in vapor
2. immerse them in hot detergent solution, then rinse with clean water
3. run them through the dishwashing process
4. spray them with a freon-ethylene oxide

3-39. Precautions against secondary aerosols include which of the following?

1. Prohibiting personnel from entering dining spaces while wearing outer-garments
2. Keeping down dust by wetting surfaces with water or oil
3. Preventing unauthorized personnel from entering dining spaces
4. All of the above

● Questions 40 through 43 refer to decontaminating items that have been exposed to biological agents.

3-40. How should you treat sealed cans of food?

1. Soak the cans in a chlorine solution for 15 minutes, then rinse in potable water
2. Disinfect the cans with a formalin or freon-ethylene vapor
3. Soak the cans in a solution of general-purpose liquid and water-soluble detergent for 15 minutes then rinse with potable water
4. Each of the above methods may be used.

3-41. Dried prunes packed in sealed paper sacks have been stored in a contaminated area. Which of the following procedures could be used to sanitize the prunes?

1. Scrub the outside of the paper sacks with detergent suds
2. Soak the sacks in an effective detergent solution, then rinse them well
3. Store the sacks in the freeze spaces for 24 hours or more
4. Wipe off the sacks with a chlorine solution (200 parts per million), then thoroughly cook the prunes

3-42. Which of the following foods would most likely be treated with ethylene oxide and subsequently cooked thoroughly?

1. Frozen green beans
2. Frozen beef steaks
3. Fresh white potatoes
4. Peaches from opened cans

3-43. In an emergency when no regular water treatment facilities are available, which of the following methods can be used to render the water supply safe for drinking?

1. Adding ethylene oxide
2. Boiling the water for 20 minutes or longer
3. Adding laundry bleach
4. Filtering the water through wood ashes

Learning Objective: Recognize the defense measures that should be taken against chemical agents that may contaminate the galley during wartime.

● Items 3-44 through 3-46 are statements about the characteristics of chemical warfare (CW) agents. Check them True or False.

3-44. All chemical warfare agents are gases.

3-45. Most chemical warfare agents disturb body functions.

3-46. Vapor contamination by a chemical warfare agent is less dangerous than liquid contamination.

3-47. Metal or china utensils that have been exposed to light liquid contamination should be immersed in actively boiling water to which an alkaline detergent has been added for a period of at least
1. 5 min
2. 10 min
3. 20 min
4. 30 min

3-48. What agent should you use to decontaminate a unit of electrical equipment that has been exposed to heavy liquid contamination?
1. Detergent, water and vinegar
2. Trichloroethane, technical chloroform, or DS2
3. Hot water and hypochlorite
4. A grease solvent such as kerosene

Learning Objective: Determine how the Navy ration system for the enlisted dining facility afloat functions and how food supplies are procured, identified, and accounted for.

3-49. How is the monetary allowance for the enlisted dining facility computed?
1. By multiplying the number of personnel on board by the current daily ration allowance
2. By dividing the current daily ration allowance into the number of personnel on board
3. By multiplying the number of personnel authorized to eat in the enlisted dining facility by the current daily ration allowance
4. By multiplying the number of meals served per day by the current daily ration allowance

3-50. Subsistence items which are not listed in the Federal Supply Catalog may be procured for immediate sale in all but which of the following dining facilities?
1. Enlisted dining facility
2. Chief petty officers' dining facility
3. Cabin/commanding officers' dining facility
4. Wardroom dining facility

3-51. Why should food items that are purchased from foreign commercial sources be purchased in limited quantities?
1. These types of items are not palatable to all personnel; therefore, the breakout room may become overstocked from non use
2. These items must be consumed while deployed because they cannot be returned to the United States
3. These items will cause a change in the high and low limits established by the menu planner
4. These items do not provide the same nutritional balance as the same food items listed in the Federal Supply Catalog

3-52. On which of the following forms might you requisition food supplies?
1. DD 1348
2. NAVSUP 1059
3. NAVSUP DD 1348m
4. Any of the above

3-53. Control of procurement documents and a quick means of identifying outstanding requisitions and purchase orders is accomplished by maintaining a
1. Requisition Log NAVSUP Form 1336
2. Order and Inspection Report, NAVSUP Form 48
3. Subsistence Ledger, NAVSUP Form 335
4. Enlisted Dining Facility Control Record, NAVSUP 338

Learning Objective: Determine who is responsible for inspecting the quality of food items received from commercial suppliers. Recognize the correct procedures for determining whether the food products are fit for consumption.

3-54. Food items that require inspection and are received from commercial suppliers must be inspected by the
1. executive officer
2. food service officer
3. supply officer
4. medical department representative

3-55. Which of the following food products will deteriorate faster than the others?
1. Poultry
2. Seafood
3. Dairy products
4. Beef

3-56. Under what conditions, if any, may thawed fish be refrozen and used later?
1. When it has been stored at 30° F to 32° F for less than 12 hours
2. When it has been thawed for less than 12 hours
3. When it has been precooked
4. Under no conditions

In items 3-57 through 3-60, select from column B the quality guides to be used for inspecting the fresh vegetables in column A.

A. Vegetable	B. Quality
3-57. Peppers	1. Brittle, smooth stems
3-58. Celery	2. Medium size, firm, bright green
3-59. Cucumbers	3. Tight, green heads and leaves not discolored
3-60. Lettuce	4. Thick walled, firm, and uniform glossy color

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In items 3-61 through 3-64, select from column B the evidence of quality to be used for each vegetable in column A.

A. Vegetable	B. Quality
3-61. Tomatoes	1. Smooth, crisp and firm
3-62. Dry onions	2. Thick, tapering ends, no soft spots
3-63. Sweet potatoes	3. Clean, hard, dry
3-64. Radishes	4. Firm, good color, blemish-free

3-65. What is the best indicator of quality in fruit?
1. Taste
2. Large size
3. No blemishes
4. Bright color

Assignment 4

Procurement and Storage (Continued); Operation and Care of Food Service Equipment

Textbook assignment: Pages 67 - 106

Learning Objective: Recognize the correct procedures for determining whether food products received from commercial suppliers are fit for consumption.

4-1. Which of the following characteristics of apples would be an indication that you should reject them?
1. Highly colored
2. Mealy
3. Tart
4. Firm

4-2. Shaking the fruit and listening to the rattling of the seeds is one way to determine the ripeness of which of the following?
1. Grapefruit
2. Cherries
3. Cantaloupe
4. Watermelon

4-3. In judging oranges and grapefruit, which of the following is an indication of good quality?
1. Large size
2. Heavy weight in proportion to size
3. Soft, spongy skin
4. Deep orange or yellow color

4-4. General appearance of the fruit is a safe indication of quality in which of the following?
1. Pineapples
2. Tangerines
3. Watermelons
4. Strawberries

In items 4-5 through 4-8, select from column B the indication of ripeness that may be used for each fruit in column A.

A. Fruit	B. Indications of ripeness
4-5. Pears	1. Firm, shiny skin; yields to gentle pressure
4-6. Honeyball melons	2. Skin yellow, flecked with brown
4-7. Plums	3. Light yellow rind, distinct aroma, yields slightly to pressure
4-8. Bananas	4. Slightly soft, bright color, not leaky

4-9. You inspect canned fruits, meats, and vegetables to determine which of the following?
1. The contents and date of pack are indicated on each can
2. The cans are the size requisitioned
3. The cans are not badly damaged from rust and dents and are free of pinholes
4. All of the above

Learning Objective: Recognize the proper procedures for receipt and stowage of food items. Recognize the causes for spoilage of food items.

4-10. What NAVSUP form is used to certify the quality of food items at the time the food is received from commercial suppliers?
1. 48
2. 335
3. 1336
4. 1509

4-11. When posting receipts, use of which of the following forms is of great importance to the storeroom custodian?
1. Record of Receipts and Expenditures, NAVSUP 367
2. Subsistence Ledger, NAVSUP 335
3. Stock Tally, NAVSUP 209
4. Requisition Log, NAVSUP 1336

4-12. At what price are subsistence items transferred or the inventory value extended?
1. Current unit price
2. Last receipt price
3. Average of the unit price for the previous quarter
4. Average of the receipt price for the previous quarter

4-13. Breaking out of stored supplies can be accomplished more rapidly if the MS stores the supplies according to which of the following?
1. Safety
2. Accessibility
3. Orderliness
4. Size

4-14. The length of time subsistence items are kept in storage should be estimated from what date?
1. Packing date
2. Receipt date
3. Shipping date
4. Storage date

4-15. How should 100-pound bags of flour be stored?
1. Stacked in a corner of the storeroom--5 or 10 bags high
2. Stacked on pallets away from the bulkhead
3. Stacked to the overhead in one corner of the storeroom
4. Stacked on pallets against the bulkhead

4-16. The keeping time of some food items can be increased by 100 per cent if they are stored at what temperature?
1. 90° F
2. 75° F
3. 70° F
4. 40° F

In items 4-17 through 4-19, select from column B the result of freezing during storage that applies to the food in column A.

A. Food	B. Result of Freezing
4-17. Prepared mustard	1. Product is undamaged
	2. Product may soften
4-18. Rolled oats	
4-19. Canned asparagus	3. Product will appear unpalatable but be safe to use

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4-20. The main reason for keeping glass containers of food in their cartons until they are needed is to
1. conserve storage space
2. make inventorying easier
3. avoid the harmful effect of light
4. eliminate breakage

4-21. Which of the following procedures will help you maintain the proper circulation of air in the cold storage room?
1. Using pallets or deck grating between the deck and stacks of food items
2. Providing space between stacks of items and the bulkhead
3. Using a fan
4. All of the above

4-22. Assume that fruits and vegetables with a temperature higher than that of the frozen food locker room are delivered to the MS. What action should he take?
1. Spread all the cases out on the deck until the temperature is equalized
2. Stack the cases on the deck so that the bottom cases cool first
3. Store the items in the usual manner on pallets
4. Recommend the items for survey

Learning Objective: Determine the proper procedures for maintaining refrigerated spaces.

4-23. What precaution should you take if frost builds up too rapidly on the coils of a refrigerator unit?

1. Schedule breakouts evenly throughout the day
2. Schedule all breakouts for a single time early in the day
3. Lower the temperature of the coils
4. Place a bucket of water in the refrigerated space

4-24. Which of the following methods would provide for circulation of air between cases in a freezer room where cold air is expelled from blower units at the ends of the room?

1. Stacking cases on pallets
2. Keeping stacks low and allowing maximum air circulation
3. Allowing four inches between the bulkhead and stack and adequate space between the stacks
4. All of the above

Information for items 4-25 through 4-27. Assume that you are designated to supervise all issues to the enlisted dining facility, and therefore, are familiar with NAVSUP Form 338, the enlisted dining facility control record.

4-25. In keeping this record, you fill in columns 2 through 5 when

1. you are in port
2. you are underway
3. you are underissue
4. you are overissue

4-26. For the 5th day of May, you enter in column 9 the

1. value of rations issued on 5 May
2. cumulative monetary allowance for the first five days of May
3. cumulative value of all rations issued for the first five days of May
4. cumulative monetary allowance through 5 May for the accounting period beginning 1 April

4-27. If on 1 July you have served a total of 324 rations and the total ration cost has been $353.16, you should enter what amount in column 10?

1. $ 1.09
2. $ 2.90
3. $353.16
4. $469.80

4-28. How often is the billing document submitted to a cognizant treasurer of an operating dining facility?

1. Daily
2. Weekly
3. Monthly
4. Quarterly

4-29. Assume that a formal survey is deemed necessary due to the negligent loss of food items. Which of the following officers may be assigned to the survey board?

1. Commanding officer
2. Personnel officer
3. Officer on whose records the items being surveyed are carried
4. Officer charged with custody of the items being surveyed

4-30. Entries in the Expenditure Log, NAVSUP Form 1334, which cover losses of food items expended without survey are signed by the

1. commanding officer
2. executive officer
3. disbursing officer
4. food service officer

Learning Objective: Determine the correct procedures for keeping the records and making reports required for the effective management of a dining facility. Recognize the proper conduct of inventories.

4-31. At which of the following times is the Enlisted Dining Facility Operating Statement, NAVSUP 1358 normally submitted?

1. Monthly
2. Quarterly
3. Upon relief of the accountable officer
4. Both 2 and 3 above

4-32. The total inventory value is determined by

1. averaging the fixed price of the items, extending the total item value, and adding the totals of all pages
2. averaging the last receipt price of all the items, extending the total item value, and adding the totals of all of the pages
3. pricing the items at the last receipt price, extending the total item value, and adding the totals of all the pages
4. pricing the items at the fixed price, extending the total item value, and adding the totals of all pages

4-33. Assume that after conducting an inventory a shortage of an item is discovered. What procedure is used to show the shortage on the NAVSUP 335?
1. The amount is shown as a survey under the "other" expenditure column
2. The amount is shown as an inventory adjustment under the "enlisted dining facility" expenditure column
3. The amount is shown as an inventory adjustment under the "other" expenditure column
4. The amount is shown as an inventory adjustment under both the "enlisted dining facility" and "other" expenditure columns

4-34. Assume you receive an adjusted invoice to a previous return causing an overissue to the current return. What action should you take?
1. Submit the invoice with the current return
2. Submit a corrected return covering the period of the erroneous receipt
3. Submit part of the invoice with the current return and an equal part for the period covering the erroneous receipt
4. Submit part of the invoice with the current return and make allowance for the erroneous receipt in future returns

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Learning Objective: Determine the correct methods, procedures, and terms used in the procurement and storage of food items for use in the officers' dining facility.

4-35. Private dining facilities are authorized to procure food from an available source. What factors determine the correct source?
1. Price and quantity
2. Price and acceptance
3. Price and availability
4. Quality and quantity

4-36. Which of the following methods is used in the procurement of food items for a private dining facility?
1. Issue
2. Transfer
3. Purchase
4. Each of the above

4-37. What term is used in the supply department to refer to food items which require some degree of refrigeration?
1. Semiperishable
2. Perishable
3. Fabricated
4. Dehydrated

4-38. What is the correct term for a standard quantity of an item which indicates the least amount that can be issued from Navy stock?
1. Unit of measurement
2. Unit of supply
3. Unit of stock
4. Unit of issue

4-39. Normally, what is the only limitation on purchasing food items from the enlisted dining facility?
1. The cost of the items are in excess of the normal cost of items for the officers' dining facility and cannot be issued
2. The supply officer may at his discretion restrict certain general items for use by the enlisted dining facility only
3. The sale of the food items will exceed funds available in the officers' dining facility and will not be issued
4. The sale will not unduly restrict quantity and quality available for issue to the enlisted dining facility

4-40. Who has final responsibility for loading a sufficient quantity and range of food items to take care of the enlisted dining facility requirements and private dining facilities?
1. Supply officer
2. Caterer
3. Treasurer
4. Leading MS

4-41. What statement is placed on a requisition for items that are for use of private dining facilities only?
1. "Cash sales only"
2. "Private dining facility only"
3. "Issue to private dining facility only"
4. "For sale to private dining facilities"

4-42. Which of the following factors must you consider before you purchase food items from commercial sources?
1. The type of operating schedule
2. Storage facilities available
3. The cost
4. All of the above

4-43. What affect, if any, will the climate have on the food to be served?

1. The cost will increase or decrease
2. It will determine the type and quantity of food served
3. The quantity will always increase with hot weather and decrease in cold weather
4. No affect

4-44. On other than large ships, where do you usually store semi-perishable food belonging to the wardroom dining facility?

1. In the wardroom freezer located in the galley
2. In a space designated for use by the wardroom in the enlisted dining facility storerooms
3. In a wardroom refrigerated space
4. In a wardroom walk-in freezer

4-45. How often do you usually draw items that require refrigeration from the enlisted dining facility?

1. Before each meal
2. Once each day
3. Once each week
4. Twice each week

● Items 4-46 through 4-51 refer to purchases by a private dining facility from the enlisted dining facility.

4-46. Which form do you use to purchase food items from the enlisted dining facility?

1. NAVSUP Form 1250
2. DD Form 1348
3. NAVCOMPT Form 739
4. NAVSUP Form 1282

4-47. After the required form has been prepared, which of the following personnel must sign it as the requesting officer?

1. Commanding officer
2. Supply officer
3. Treasurer
4. Senior MS

4-48. Which offficer must approve the sale of food items from the enlisted dining facility?

1. Commanding officer
2. Food service officer or supply officer
3. Caterer
4. Ship's store officer

4-49. You prepare the requisition in triplicate. What copy or copies are returned to the treasurer after issue is made?

1. Original
2. Original and triplicate
3. Duplicate
4. Original, duplicate, and triplicate

4-50. At what price are most food items charged to the private dining facility?

1. Last receipt unit price
2. Fixed price established by NSO
3. Average unit cost price
4. Fixed price plus 3% surcharge

4-51. When a standard bakery product is produced in the galley of the enlisted dining facility and sold to a private dining facility, the price is determined by

1. using a Navy Subsistence Office price list
2. computing the cost of the ingredients, then adding a 10% markup
3. the food service officer, using cost figures
4. the chief baker, using cost figures, plus a 5% markup

4-52. You may make purchases from commercial suppliers to obtain which of the following?

1. Items that are not carried in the enlisted dining facility storerooms
2. A greater variety in menu planning
3. Items that are required for special meals
4. All of the above

4-53. What form do you use when you purchase food items from wholesalers, supermarkets, and commissary stores?

1. DD Form 1149
2. NAVCOMPT Form 739
3. DD Form 1348
4. NAVSUP Form 48

4-54. What type of fund is usually established by a private dining facility to handle small cash purchases?

1. Imprest fund
2. Voucher fund
3. Petty cash fund
4. Purchase fund

4-55. If a fund has been established by a private dining facility to handle small purchases, what form is used to substantiate cash expenditure?

1. DD Form 1149
2. NAVCOMPT Form 743
3. NAVCOMPT Form 739
4. NAVSUP Form 1282

Learning Objective: Recognize the various types of cooking equipment and the purpose of each. Identify the proper operating procedures, the proper care and cleaning of the equipment, and the safety precautions that should be observed. (continued in assignment 5)

In items 4-56 through 4-59, select from column B the type of electric range that contains the features specified in column A.

A. Features

4-56. Griddle, three section hot plate, and two-compartment oven

4-57. Three surface units and one oven

4-58. Two surface units and one oven

4-59. One surface and one oven

B. Type

1. A
2. B
3. C
4. S

4-60. Which of the following Navy ranges is a compact galley unit developed for use on submarines?
1. Type A
2. Type B
3. Type C
4. Type S

4-61. You are told to clean an electric range thoroughly. Which of the following is NOT a correct procedure for this cleaning task?
1. Scour the flat griddle surface with a pumice stone block
2. Use a powdered cleanser on the enameled surfaces
3. Wash the grease filter mounted in the range hood
4. Remove and scour the drip pans

4-62. The purpose of the thermostat on an electric oven is to
1. heat the oven before it is used
2. shorten the baking times as much as possible
3. keep the oven at a set temperature
4. cool the oven after use

4-63. What is the purpose of the griddle guard on an electric griddle?
1. To drain off excess grease
2. To regulate the heat
3. To keep food from sliding off the griddle
4. To fry food evenly on both surfaces

4-64. In order to control smoking and the undesirable accumulations of grease on the griddle, you should clean it regularly. The carbonized material can be removed with a pumice block or by which of the following methods?
1. Using bleach to soften the hard grease, then wiping it off with a wet cloth
2. Softening the burned-on grease with an ammonia-soaked cloth, then wiping it off with a wet cloth
3. Turning up the griddle to top heat to burn off the accumulation of grease
4. Scraping the griddle surfaces with a sharp knife

4-65. What does the type number of a deep-fat fryer represent?
1. The number of gallons of fat required to fill it
2. The number of pounds of french fried potatoes which may be prepared at one time
3. The number of pounds of french fried potatoes which may be prepared per hour
4. The number of pounds of french fried potatoes which may be prepared per minute

4-66. The temperature of a deep-fat fryer should never exceed
1. 275°F
2. 345°F
3. 375°F
4. 400°F

4-67. Water-soaked foods will cause fat in a deep-fat fryer to
1. turn rancid
2. boil over
3. overheat
4. smoke heavily

4-68. What type of extinguisher do you use on a fire in the deep-fat fryer?
1. Portable CO_2
2. Purple K
3. Dry chemical MET-T-X
4. Water and soda mix

4-69. Which of the following steps should NOT be taken when you clean a deep-fat fryer?
1. Cool the unit until the fat is at a temperature of about 150°F
2. Drain out the fat and wash the kettle
3. Clean the outside of the kettle with a grease solvent
4. Leave the heating element on low for an hour to dry out the kettle

Assignment 5

Operation and Care of Food Service Equipment (continued); Nutrition and Menu Planning

Textbook Assignment: Pages 107 - 136

Learning Objective: (continued) Determine the correct operating and cleaning procedures and safety precautions that should be observed in the operation of coffee-making equipment.

5-1. The siphon pipe of an electric coffee urn serves to
   1. indicate the amount of coffee in the urn
   2. thoroughly mix the coffee in the coffee tank
   3. force hot water up and spray it over the ground coffee
   4. regulate the steam pressure in the urn

● In answering questions 5-3 and 5-4 assume that Striker Potter is preparing coffee in an electric coffee urn.

5-2. Potter fills the urn with cold water and turns on the electric power switch. He should wait to add the coffee grounds until the urn's pressure gauge shows a reading of approximately
   1. 1 1/2 lb
   2. 2 lb
   3. 2 1/2 lb
   4. 3 lb

5-3. After Potter stops the agitating action by shutting off the agitating valve, he should next proceed to
   1. open the siphon valve
   2. close the siphon valve
   3. open the cold water filling valve
   4. remove the leacher and the leacher cloth

5-4. What type of coffee maker makes coffee by means of a boiling action in the lower portion which in turn forces the water into the upper portion?
   1. Coffee urn
   2. Vacuum coffee maker
   3. Percolator
   4. Dripolator

5-5. In addition to the regular daily cleaning of coffee urns, about twice a week you should sweeten the urn by cleaning it with hot water and
   1. baking soda
   2. salt
   3. detergent
   4. bleach

Learning Objective: Recognize the various types of food preparation equipment and the purpose of each. Identify the proper operating procedures, the proper care and cleaning of the equipment, and the safety precautions that should be observed.

5-6. Where is bread toasted in the continuous type electric toaster?
   1. In motor driven revolving trays
   2. In a vertical oven provided with top slots
   3. In a horizontal oven through which a conveyor belt carries the toast
   4. On racks which move slowly over heated coils

5-7. If you drop an object in a circular bowl with a rough surface and a separated bottom that spins rapidly, the bottom will throw the object against the sides. What food preparation machine operates on this principle?
   1. Food cutter
   2. Electric meat and vegetable chopper
   3. Vegetable peeler
   4. French-fry cutter

5-8. Which of the following electrically operated machines would you use to shred cabbage?
   1. Vegetable cutter
   2. Vegetable peeler
   3. French-fry cutter
   4. Vegetable chopper

5-9. What part of the french-fry cutter determines whether carrots are cut into cubes or slices?
   1. Knife
   2. Die
   3. Worm
   4. Disk

5-10. The french fry extruder is an electrically operated machine which will make french fries out of fresh, whole potatoes.

5-11. To clean the french fry extruder you should do which of the following?
1. Soak the entire machine in hot water
2. Wash the entire machine in chlorine solution
3. Spray the entire machine with hot water
4. Disassemble and wash in mild detergent water

5-12. If you are cooking in a steam-jacketed kettle, which of the following actions will have dangerous consequences?
1. Filling the kettle three-fourths full
2. Resting the metal paddle across the top of the kettle
3. Cleaning the kettle with boiling water
4. Closing the safety valve when you are turning on the steam

5-13. If the steam supply in your galley's steamer is separately controlled, you turn on the steam by
1. opening the exhaust valve
2. closing the compartment door securely
3. closing the compartment door and opening the exhaust valve
4. turning the valve wheel clockwise

5-14. If steam-condensate fails to appear in the drainpipe after a few minutes of steamer operation, you should try to correct the trouble by closing the steam valve and removing and thoroughly cleaning the
1. drainpipe
2. steam gage
3. steam-trap strainer basket
4. steamer compartments

5-15. How often should the steamer be scrubbed clean and rinsed with water at 180°F?
1. After each meal
2. Twice a day
3. Every evening
4. Once a week

5-16. Assume that MS2 Brown investigated the steamtable after receiving several complaints that the food being served from it tasted dry and overcooked. Which of the following conditions found by Brown probably caused the annoyance?
1. The temperature of the food pans was 193°F
2. At the beginning of the meal the food pans were two-thirds full
3. The food pans were placed in the steamtable 45 minutes before serving
4. The water in the steamtable was allowed to go over 200°F

5-17. How often should the steamtable be drained and cleaned?
1. After each meal
2. Twice a day
3. Every evening
4. Once a week

Learning Objective: Recognize the correct procedures for the care and cleaning of refrigeration equipment.

5-18. Which of the following is/are necessary in order to keep a refrigerator operating at top efficiency?
1. Keep it clean
2. Defrost it regularly and properly
3. Load only to capacity
4. All of the above

● Information for items 19 and 20. After checking the storage spaces, you return to supervise four strikers who are cleaning up the galley. You note that Carling is cleaning out the grease gutters on the electric range's griddle surface, Bronson is rinsing the inside of the refrigerator with baking soda solution, Jones is hosing down the inside of the refrigerator door with warm water, and Burns is scraping the electric griddle top.

5-19. Which striker should be corrected for using an incorrect cleaning procedure?
1. Carling
2. Bronson
3. Jones
4. Burns

5-20. You stop the work of the four strikers for a brief review of cleaning procedures in the galley. In reviewing the proper care of the refrigerator, you remind the strikers that it should be cleaned at least once a week, defrosted regularly, and should never be overloaded. The refrigerator cleaning procedure you outline includes wiping the door gaskets, washing the inside with

1. soap and hot water, rinsing it with ammonia solution, and then air-drying it
2. scouring powder and cold water, rinsing it with ammonia solution, and drying it thoroughly
3. steel wool and scouring powder, rinsing it with baking soda solution, and air-drying it
4. soap and warm water, rinsing it with warm baking soda solution, and drying it thoroughly

5-21. Select the acceptable procedure for speeding up the process of defrosting the refrigerator?

1. Placing pans of hot water in the refrigerator
2. Chopping the frost and ice with an ice pick
3. Scraping the coils with a long, thin carving knife
4. Pouring hot water on the cooling unit

Learning Objective: Recognize the proper use, operation, care, and cleaning of meat cutting equipment and the safety precautions that should be observed.

5-22. What size plate should be used for grinding meats?

1. 1/8 in.
2. 3/8 in.
3. 3/16 in.
4. 5/16 in.

5-23. Damage to the gears of the electric meat grinder is likely to result from grinding which of the following items?

1. Crackers
2. Boneless beef
3. Onions
4. Dried vegetables

Learning Objective: Identify various types and characteristics of electric food mixers; determine the correct operating and cleaning procedures and safety precautions that should be observed.

5-24. Which of the following attachments of the electric food mixer do you use to beat egg whites?

1. Dough hook
2. Wire beater
3. Flat beater
4. Churn paddle

5-25. The wheel or crank control on a large electric mixer controls the

1. tightening of the beater in the beater shaft
2. lowering of the beater to the proper position for mixing
3. raising of the mixing bowl to the proper position for beating
4. speed of the mixer

5-26. Which of the following rules should NOT be observed when you operate the electric mixer?

1. Fill the bowl half full or less
2. Release the clutch when you change motor speeds, or stop the machine if no clutch is provided
3. Use the mixing time specified in the recipe
4. Scrape batter from the sides of the bowl when the mixer is throwing it up

5-27. What attachment on your large electric mixer will enable you to use a small mixing bowl?

1. Dolly
2. Adapter
3. Crank
4. Grooved shaft

5-28. Which of the following is NOT a proper procedure for cleaning and maintaining the electric mixer and attachments?

1. Wash beaters, paddles, and bowls immediately after use in hot soapy water and rinse with water 180°F
2. Clean the body of the machine after each meal by the use of a damp cloth or wash with water as necessary for proper sanitation
3. Inspect the motor and mechanical parts of the mixer and oil and grease once a week
4. Hang beaters and paddles upside down to air dry

5-29. What department aboard ship services the electric mixers in the galley?
1. Supply department
2. Deck department
3. Operations department
4. Engineering department

Learning Objective: Determine the correct operating and cleaning procedures for most cutting equipment and the safety precautions that should be observed.

5-30. Before you cut with an electric meat saw, the blade should be adjusted so that it is
1. loose
2. rigid
3. flexible
4. hot

5-31. When you are sawing meat with the motor-operated meat saw, which of the following safety precautions should you observe?
1. Keep your hands on the part of the meat farthest away from the blade
2. Set the guide blade two inches above the meat
3. Place the meat against the sliding tray guide firmly enough to slice the meat evenly but without unnecessary force
4. All of the above

5-32. You should lubricate the moving parts of the electric meat cutter at least once every
1. day
2. week
3. fortnight
4. month

5-33. The cutting blade of which of the following machines should be cleaned by wiping it with a damp cloth, then a dry cloth, and then coating it lightly with salad oil?
1. Meat and vegetable chopper
2. French-fry cutter
3. Meat slicer
4. Meat cutter

In questions 34 through 36 select from column B the proper machine for performing the task in column A.

	A. Task	B. Machine
5-34.	Grinding raw beef into hamburger	1. Meat tenderizer
5-35.	Cutting frozen meat into chops	2. Electric meat and vegetable chopper
5-36.	Cutting a ham down to sandwich-size portions	3. Motor-operated meat saw
		4. Motor-operated meat slicer

5-37. For what kind of meat cutting should you use a knife having a long wide blade?
1. Boning beef
2. Piercing carcasses
3. Carving cooked roasts
4. Slicing raw steaks

5-38. The butcher's steel is used mainly to
1. keep knife edges in good condition
2. hollow knife edges
3. clean knife edges
4. sharpen knife edges

5-39. The knives should be kept ready for use by which of the following?
1. Placing them in a drawer with other knives and tools
2. Placing them in a knife rack fastened to the bulkhead
3. Plunging them into a wood block in the meat cutting table
4. Hanging them from hooks in the bulkhead

Learning Objective: Recognize the correct procedures for the operation, care, and cleaning of dishwashing machines.

5-40. The single-tank dishwashing machine uses wash water at a temperature higher than 140°F in order to accomplish which of the following?
1. Keep bacteria to a minimum
2. Remove food particles more efficiently
3. Eliminate pre-washing dishes by hand
4. All of the above

5-41. What are the minimum wash and rinse time intervals used for washing dishes in a double-tank dishwashing machine?
1. 40-sec wash; 10-sec rinse
2. 40-sec wash; 20-sec rinse
3. 20-sec wash; 20-sec rinse
4. 20-sec wash; 10-sec rinse

5-42. How do you ensure that water for the rinsing operation of a double tank dishwashing machine is heated to 180°F or higher before the conveyer carries dishes into it?
1. By closing the final rinse steam valve before rinsing
2. By leaving the final rinse steam valve open during rinsing
3. By setting the rinse tank thermostat at 180°F before rinsing
4. By operating the pump for two minutes before starting up the conveyor

5-43. All of the following directions for using a double-tank dishwashing machine are correct. Which one protects and improves the cleaning performance of the machine?
1. Using the amount of detergent prescribed for the wash tank capacity and the type of water
2. Adjusting the steam valve to maintain a rinse water temperature of 180°F or above
3. Maintaining the wash solution temperature between 140°F and 160°F
4. Prescraping or prewashing gear and dishes until all solid food residues are removed

5-44. Which of the following actions should be taken following each use of the machine?
1. Clean the interior of the machine, the spray arms, and strainer pans
2. Use descaling compound as directed
3. Lubricate all moving parts
4. Run the empty dishwashing machine through a complete dishwashing cycle

5-45. How much orthophosphoric acid and general purpose detergent are required to descale a dishwasher with a 25 gallon tank?
1. 140 fluid oz of acid and 10 fluid oz of detergent
2. 10 fluid oz of acid and 140 fluid oz of detergent
3. 12.5 fluid oz of acid and 175 fluid oz of detergent
4. 175 fluid oz of acid and 12.5 fluid oz of detergent

5-46. What is the capacity of a dishwasher tank 22 inches long, 30 inches wide, and 7 inches deep?
1. 10 gal
2. 15 gal
3. 20 gal
4. 25 gal

5-47. How often should the salad bar and cabinet be (A) washed and rinsed and (B) rinsed with a soda solution to prevent bad odors?
1. (A) Daily (B) Weekly
2. (A) After each meal (B) Daily
3. (A) After each meal (B) Weekly
4. (A) Daily (B) At the end of the day

5-48. What should be the holding temperature for the refrigerated milk dispenser?
1. Between 38°F and 44°F
2. Between 36°F and 46°F
3. Between 35°F and 40°F
4. Between 32°F and 38°F

Learning Objective: Recognize the reasons for and the importance of observing fire prevention and safety precautions in food service areas; identify the correct procedures.

5-49. What is the primary reason for observing the following rules in the galley?
   (A) Do not smoke in the galley.
   (B) Clean the range canopies daily
   (C) Dispose of waste paper and rubbish promptly.
   (D) Inspect fire extinguishers regularly.
1. To promote sanitation
2. To increase working efficiency
3. To prevent fire damage
4. To protect the equipment

5-50. The vent screens in the galley should be taken out and cleaned
1. after each meal
2. daily
3. weekly
4. monthly

5-51. What should you do about the overheating of motors, the unusual noise in equipment during operation, the leaking oil or grease, and the loose electrical connections?
1. Repair the equipment yourself
2. Notify the preventive maintenance personnel the next time they are on a PM check
3. Report any malfunction immediately to the engineering department
4. Ignore the conditions since maintenance is the responsibility of the engineering department

5-52. To avoid potential safety hazards in food service areas, you should be alert to which of the following dangerous situations?
1. Any cutting or slicing machine without safety devices in place
2. Equipment operating above its designed capacity
3. Spills on the floor
4. All of the above

Learning Objective: Recognize the various nutrients contained in food and the amount of each required for the maintenance of health. (Continued in Assignment 6)

5-53. As an MS, which of the following information would NOT be essential to you in order to carry out your responsibilities?
1. Which foods are popular and which are disliked by your crew
2. What nutrients you need to consume
3. What quantities of each nutrient is contained in each major item you are served
4. How to use the "food groups plan" in developing menus

5-54. What is a calorie?
1. A definite amount of fat-producing food
2. A unit of energy produced by food
3. A component of food
4. A measure used to evaluate the nutritional qualities of food

5-55. The number of calories a person needs depends upon which of the following?
1. The activities of the person
2. The climate in which the person lives
3. The age and weight of the person
4. All of the above

5-56. What is likely to be the daily caloric need of an average sized, 18-year-old male recruit at boot camp?
1. 2,500 calories
2. 3,000 calories
3. 3,500 calories
4. 4,000 calories

In questions 5-57 through 5-60, select from column B the nutritive element described in column A.

	A. Characteristics	B. Elements
5-57.	The most concentrated source of energy	1. Protein
		2. Carbohydrates
5-58.	The primary and most quickly available source of energy	3. Fat
		4. Minerals
5-59.	Builds tissue and repairs materials	
5-60.	Helps build soft tissues, bones, and teeth, and helps regulate nerves and muscles	

In questions 5-61 through 5-63, select from column B the energy food group to which each food in column A primarily belongs.

	A. Foods	B. Food Group
5-61.	Bread	1. Carbohydrate
5-62.	Butter	2. Protein
5-63.	Chicken	3. Fat

5-64. What foods should you use in large quantities while at sea in order to make sure the crew on your ship get enough calcium?
1. Fruits
2. Milk and cheese
3. Molasses and syrup
4. Fresh meats

5-65. A diet low in calcium is also likely to be low in which of the following nutrient?
1. Carbohydrates
2. Fats
3. Vitamin C
4. Riboflavin

5-66. Which of the following foods is the richest source of iron?
1. Carrots
2. Orange juice
3. Liver
4. Butter

5-67. A person who drinks a great deal of water and prespires freely needs to consume daily which of the following?
1. One teaspoonful of salt
2. Two to three teaspoons of salt
3. One cup of sugar
4. Two to three cups of sugar

5-68. How much water, including that consumed in the foods eaten, is required daily by the average adult?
1. 1/2 pt
2. 2 pt
3. 5 pt
4. 10 pt

Assignment 6

Nutrition and Menu Planning (continued): Meat, Poultry, and Seafoods

Textbook Assignment: Pages 136 - 161

Learning Objective (Continued): Recognize the various nutrients contained in food and the amounts of each required for the maintenance of health.

6-1. Which vitamins must be supplied daily because the body does not store them?
1. B and C
2. A and B
3. A and D
4. C and D

6-2. Which of the following cuts of meat is probably the best source of thiamine?
1. Beef round steak
2. Lamb shoulder chops
3. Pork loin
4. Veal tenderloin

6-3. What kind of food contributes most to the prevention of scurvy?
1. Fresh meats
2. Milk products
3. Citrus fruits
4. Enriched cereals

6-4. Which of the following foods is an important source of the vitamin that maintains good eyesight?
1. Eggs
2. Potatoes
3. Bread
4. Citrus fruits

6-5. Which vitamin occurs in few foods but is manufactured in the body when the skin is exposed to sunlight?
1. C
2. D
3. E
4. K

6-6. Which of the following vitamins found in spinach and other leafy vegetables provides an important element in the clotting of blood?
1. A
2. C
3. D
4. K

In questions 6-7 through 6-11 choose from column B the vitamin(s) for which each group of food in column A is/are an important source.

	A. Foods	B. Vitamin
6-7.	Oranges, tomatoes, potatoes in their skins	1. A and D 2. B complex
6-8.	Liver, egg yolk, cod liver oil	3. C
6-9.	Pork; green, leafy vegetables; green peas	
6-10.	Cream, butter, sweet potatoes	
6-11.	Wheat germ, chicken, legumes	

6-12. Which of the following groups of vitamins is most stable?
1. A and D
2. D, riboflavin, niacin
3. C, thiamine, niacin
4. B complex and C

Learning Objective: Indicate how the Navy Ration Law has changed and in what way the basic four food groups are used in menu planning.

6-13. Which of the following nutrients found in fruits and vegetables helps the body rid itself of body waste?
1. Niacin
2. Riboflavin
3. Calciferol
4. Cellulose

6-14. What is the main purpose of the Basic Four System?
1. To limit the amount of money expended per person in the enlisted dining facility
2. To guarantee that each person gets nutritious meals
3. To save the MS the work of preparing menus
4. To place maximum limits on what each member can consume

6-15. Which of the following four food groups includes foods containing ascorbic acid?
1. Group I
2. Group II
3. Group III
4. Group IV

6-16. What volume of milk will be needed to provide the minimum daily requirement of milk for 133 people?
1. 12 gal, 3 qt, 1 pt
2. 14 gal, 1 qt
3. 16 gal, 1 pt
4. 18 gal, 2 qt

6-17. Which of the following combinations of dairy foods provides the most calcium?
1. 2 cups of ice cream and 1/4 cup of cottage cheese
2. 1/2 cup of cottage cheese and 1 inch cube of cheddar cheese
3. 1 cup of ice cream and 1 x 1 x 2 inch cube of cheddar cheese
4. 1 cup of cottage cheese and 1 cup of ice cream

6-18. If a person eats two eggs for breakfast, what fraction of the minimum daily need for Group II (meat) foods has been met?
1. 1/4
2. 1/3
3. 1/2
4. All

6-19. To what nutritional group of foods do baked beans belong?
1. Vegetables and fruits
2. Bread and cereals
3. Meat
4. Milk

6-20. Menus on four days included standard servings of the vegetables and fruits listed below. Which combination supplied the most vitamin C?
1. Stuffed green peppers, cole slaw, grapefruit, and corn
2. Carrots, spinach, baked white potatoes, and watermelon
3. Green beans, cantaloupes, asparagus, and tomato juice
4. French-fried potatoes, green peas, apricots, and broccoli

6-21. You plan to serve each member 2/3 cup of cooked cereal at breakfast. If the rest of the Group IV ration is to be bread, how many slices will you need to meet the minimum daily requirement for 72 members?
1. 72
2. 144
3. 216
4. 432

Learning Objective: Specify the purposes and principles of menu planning and the proper use of the cycle menus.

6-22. Which of the following statements about cycle menus is NOT true?
1. Cycle menus are published every three months in the Navy Food Service Systems Office
2. The cycle menus, when used, must be adhered to exactly
3. Using cycle menus over a period of time can improve your ability to requisition accurately and schedule food preparation efficiently
4. Using cycle menus improves your ability to plan for good nutrition

6-23. When you plan menus, you strive for good nutrition plus meals that meet which of the following requirements?
1. Please the eye and the taste of the crew
2. Can be prepared with available facilities and personnel
3. Can be prepared within prescribed monetary allowances
4. All of the above

6-24. Which of the following dishes would contribute the most to the color contrast of a meal that includes chicken southern fried and steamed white rice?
1. Cottage cheese and pear salad
2. Chef's salad
3. Dried lima beans
4. Hominy

6-25. Which of the following principles should NOT be followed in menu planning?
1. Repeating popular menus weekly
2. Seeking contrasts in color, texture, and form of the menu items
3. Planning food which produces appetizing aromas
4. Using condiments and seasonings to enhance the flavor of the food

6-26. Which of the following foods would you probably list nearest to the top of a dinner menu?
1. Mashed potatoes
2. Tossed salad
3. Clam chowder
4. Corn bread

6-27. The most efficient MS will plan balanced menus in advance for a minimum period of how many days?
1. 7 days
2. 14 days
3. 21 days
4. 42 days

6-28. What is a good way to start planning menus for a week?
1. Plan all the desserts for a week
2. Plan all the breakfast menus for a week
3. Plan the meat or other main dish for each meal, with its accompaniments
4. Start each meal plan with the first food to be served at the meal

6-29. When you plan menus you should ask all of the following questions. The answer to which of the following questions depends upon the equipment available?
1. Have I planned for variety in color, flavor, and texture
2. Are all the foods authorized and available
3. Does the preparation for a single meal require the use of two different oven temperatures simultaneously
4. Do the foods to be served provide nutritional balance

6-30. Keeping active uses a lot of energy. Large amounts of carbohydrates, a source of energy, can be found in which of the following?
1. Peanuts
2. Beef
3. Butter
4. Fruit

6-31. Approximately what percent of the body's weight is composed of mineral elements?
1. One
2. Two
3. Three
4. Four

6-32. Which of the following would contribute most toward achieving variety in your menu planning?
1. Using standard recipes
2. Using a chart or set of master menus
3. Serving coffee only twice a week
4. Including a salad with every meal

6-33. Excessive cholesterol in the crew's diet can be reduced by which of the following?
1. The use of skim milk
2. Trimming fats from meats
3. By both 1 and 2 above
4. By seasoning cooked foods mildly

6-34. Assume that peanut butter is the only meat group food available to you in an emergency situation. If you use two tablespoons of peanut butter to a sandwich, how many sandwiches must you prepare to meet the minimum daily meat group requirement for 56 people?
1. 112
2. 168
3. 224
4. 280

6-35. Which of the following statements concerning nutrients is NOT true?
1. Most nutrients do their job best when teamed with other nutrients
2. Everybody needs the same nutrients throughout life but in different amounts
3. You will need to know the quantities of each nutrient furnished by individual foods
4. All of the nutrients are obtained from foods, but no one food contains all of the nutrients

6-36. Normally, who does the menu planning for the wardroom?
1. Caterer
2. Senior MS
3. Supply officer
4. Wardroom president

6-37. Which of the following would serve as a guide for planning breakouts from the storeroom?
1. Daily food guide
2. NAVSUP P-486
3. NAVSUP P-421
4. Recipe cards

Learning Objective: Identify the various cuts of beef and the parts of the carcass from which they come.

In questions 6-38 through 6-43 select from column B the major cut from which the small cut in column A is taken.

	A. Smaller Cut	B. Major Cut
6-38.	Grill Steak	1. Heel
6-39.	Stew Meat	2. Chuck Tender
6-40.	Pot Roast	3. Inside Chuck
6-41.	Oven Roast	4. Inside Top Round
6-42.	Swiss Steak	
6-43.	Ground Meat	

Learning Objective: Indicate the forms, characteristics, inspection procedures, and the coding and grading systems pertaining to beef used by the Navy.

6-44. All meat and meat food products delivered to the Navy in the United States must bear the inspection stamp of the Department of Defense, plus that of the
1. Public Health Service
2. Federal Food and Drug Administration
3. Navy Supply Systems Command
4. U.S. Department of Agriculture

6-45. Which of the following grades of beef is/are generally procured by the military services?
1. Prime only
2. Choice only
3. Good only
4. Choice and Good

6-46. The beef roasts and steaks delivered for Navy use are of what grade?
1. Prime
2. Choice
3. Good
4. Standard

6-47. What does the term "fabricated meats" mean?
1. Meats which have been wholly boned
2. Meats which have been trimmed only
3. Meats which have been either partially or wholly boned and trimmed
4. Meats which have been wholly boned and trimmed only

In questions 6-48 through 6-51 select from column B the code that is used for the beef cut in column A.

	A. Cuts	B. Codes
6-48.	Outside round	1. Type V
6-49.	Rib-eye	2. Type III
6-50.	Chuck roll	3. Type I
6-51.	Swiss steak	4. Type II

Learning Objective: Recognize the cuts of veal and lamb used by the Navy and the proper way to slice ham.

6-52. Which of the following cuts of veal is NOT used by the Navy?
1. Chops
2. Cutlet slices
3. Ground meat
4. Roasts

6-53. In what forms does the Navy purchase lamb?
1. Chops and flank steaks
2. Roasts and chops
3. Chops and ground meat
4. Roast and steaks

6-54. To slice a boneless ham, you first cut it into
1. two equal pieces lengthwise
2. two equal pieces crosswise
3. three sections of almost equal size with one crosswise cut made first
4. four sections of almost equal size, with one crosswise and one lengthwise cut

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Learning Objective: Identify correct methods of preparing and cooking various types of meat.

6-55. What are the three methods used in meat cookery?
1. Roasting, moist heat, and frying
2. Dry heat, pan broiling, and braising
3. Moist heat, dry heat, and frying
4. Panfrying, sauteing, and cooking in small amount of fat

6-56. Which of the following rules should NOT be followed when you are roasting meat for the Navy dining facility?
1. Use temperatures from 250°F to 350°F during the entire roasting time
2. Always cover the roast
3. Roast fat side up
4. Insert the meat thermometer into the center of the roast without contacting the bone, fat, or gristle

6-57. Which of the following types of roast requires the least amount of cooking time per pound?
1. A small boneless roast
2. A large boneless roast
3. A large roast with bones
4. A small roast with bones

6-58. What two methods are used for cooking the less tender cuts of meat?
1. Braising and roasting
2. Stewing and broiling
3. Frying and simmering
4. Braising and stewing

6-59. In order to get a tender and attractive product when preparing tough cuts of beef, which of the following methods should NOT be used?
1. Cooking by braising
2. Marinating in an acid solution
3. Cooking by stewing
4. Cooking the meat uncovered

6-60. Assume that MS2 Barry begins preparing a beef stew by adding browned meat to water simmering at a temperature of 195°F. He then raises the water temperature to 212°F. After the meat is partially cooked Barry adds carrots, potatoes, and other vegetables. Barry serves the stew with noodles. What step in preparing and serving the stew did Barry perform incorrectly?
1. Browning the meat before adding it to the water
2. Raising the water temperature to 212°F after adding the meat
3. Adding the vegetables after the meat is partially cooked
4. Serving the stew with noodles

6-61. Most Navy meat is procured frozen and may be cooked without thawing. Which of the following meats is an exception to this general rule and should be thawed before it is cooked?
1. Beef liver
2. Pork slices
3. Diced meat
4. Beef steaks

Learning Objective: Indicate the types of poultry procured by the Navy. Specify the proper thawing methods for poultry. Recognize proper procedures for cooking and carving poultry.

6-62. How is frozen poultry prepared for cooking?
1. It is thawed in lukewarm water
2. It is partially defrosted, then pieces are separated or the whole bird is cut into quarters
3. It is completely thawed in the refrigerator
4. It is spread out and thawed at room temperature

6-63. Which of the following steps should you take after poultry is thawed?
1. Inspect it for the presence of undesirable materials attached to the carcass
2. Unwrap and inspect necks and giblets
3. Wash under cold, running water
4. All of the above

6-64. Which of the following procedures in the frying of chicken is used to prevent the loss of juices from the meat?
1. Rolling the pieces in seasoned flour
2. Preheating a heavy frying pan
3. Using tongs to turn the pieces
4. Frying in 1/2 inch of melted fat at 365°F

6-65. The major difference between pan frying poultry and deep-fat frying poultry is that the pan frying method requires which of the following?
1. Less fat
2. Higher temperature
3. Younger poultry
4. More seasoning

6-66. What do you do with the gizzard, heart, and liver of poultry?
1. Fry them
2. Discard them
3. Simmer them in water until tender and use them in gravy or dressing
4. Use them in making soup stock

6-67. How long should roasted turkey be allowed to rest before it is carved?
1. 10 minutes
2. 15 minutes
3. 30 minutes
4. 60 minutes

6-68. Steps you take in carving a large turkey in the galley include (A) removing the wing, (B) cutting the breast meat away from the carcass before slicing the meat, (C) cutting the meat from the thigh and drumstick, (D) removing the drumstick and thigh, and (E) carving the second side in the same manner. In what order do you take these steps?
1. A, B, C, D, E
2. D, A, E, B, C
3. A, D, G, B, E
4. D, C, A, E, B

Questions 6-69 through 6-72 are statements concerning carving boneless turkey. Judge them True or False.

6-69. Boneless turkey may be roasted from the frozen state, but will require an additional one to two hours cooking time.

6-70. After the roasting period, the turkey should be allowed to stand for at least 30 minutes to absorb juices and for best results in slicing.

6-71. Hand slicing of boneless turkey is preferred to machine slicing.

6-72. Cut each slice about 1/4 inch thick, place in shallow insert and cover with aluminum foil.

Assignment 7

Food Preparation

Textbook Assignment: Pages 159 - 187

Learning Objective: Determine the correct use of the food preparation worksheet and standardized recipes of the Armed Forces Recipe Service.

7-1. Which of the following forms serves as a written directive to watch captains and key personnel in the enlisted dining facility?
1. NAVSUP Form 1080, Enlisted Dining Facility Menu
2. NAVSUP Form 1090, Food Preparation Work Sheet
3. NAVSUP Form 1059. Subsistence Report-Multi Use
4. NAVSUP Form 1250, Single Line Item Consumption/Management Document

7-2. Which of the following information is provided on the food preparation worksheet?
1. Number of persons actually fed
2. The acceptability of specific menu items
3. Aids in determining correct portions to be prepared
4. All of the above

7-3. Which of the following forms would contain information regarding the use of leftovers?
1. NavSup 1090
2. NavSup 1092
3. NavSup 1080
4. NavSup 1046

7-4. It is recommeded that the Food Preparation Worksheet be retained for what period of time?
1. Three weeks
2. One month
3. Six weeks
4. Three months

7-5. All food should be prepared according to the recipes published in the AFRs or recipes which have been approved by the
1. menu board
2. watch captain
3. senior Mess Management Specialist
4. food service officer

7-6. Each recipe in the Armed Forces Recipe Service is set up to serve how many men?
1. 50
2. 100
3. 200
4. 700

7-7. Standard recipes specify amounts of ingredients to be used in terms of which of the following?
1. Weight only
2. Measure only
3. Number of scoops or dippers of a given size
4. Weight or measure or both

7-8. What measure of shortening is the equivalent of 1 1/2 pounds?
1. 1/2 cup
2. 1 cup
3. 1 1/2 cups
4. 3 cups

7-9. What does the abbreviation A.P. stand for on a recipe card?
1. As preferred
2. As purchased
3. After peeling
4. After parboiling

● Information for questions 7-10 through 7-12. You are making meat loaf for 225 men according to the recipe in your textbook on page 172 (chapter 8)

7-10. How many eggs will be required?
1. 12 eggs
2. 24 eggs
3. 27 eggs
4. 30 eggs

7-11. How much salt should you use by weight and measure?
1. 12 oz, 3/4 cup
2. 13 1/2 oz, 1 1/4 cups
3. 13 1/2 oz, 1 1/3 cups
4. 20 1/4 oz, 1 3/4 cups

7-12. How many loaves should you make up from your ingredients?
1. 8
2. 16
3. 18
4. 25

7-13. Which of the following steps would be incorrect when you are using standardized recipes?
1. Determine the number of servings you are to prepare
2. Read the recipe thoroughly before you start the preparation
3. Adjust the recipe if necessary
4. Position the recipe so the watch captain can see it

Learning Objective: Indicate the procedures to be taken when holding cooked foods in safe holding temperatures.

7-14. When prepared protein food is to be held for over three hours, bacteria growth can be reasonably well controlled if the food is
1. held at a temperature of 40°F or below
2. held at a constant relative humidity
3. stored in tin-plated containers at room temperature
4. stored in well-ventilated containers at room temperature

7-15. Which of the following procedures is correct in regard to leftovers?
1. Leftovers should be chilled to a temperature of 35°F to 40°F
2. Leftovers should be covered and dated to include the time
3. Both 1 and 2
4. Freeze leftovers which will be used at a later date

7-16. Reconstituted eggs are considered to be unsafe if held out of refrigeration for more than how many hours?
1. One
2. Three
3. Six
4. Twelve

7-17. Which of the following procedures is NOT recommended for handling leftovers?
1. Freezing leftover meat
2. Refrigerating leftovers in shallow pans covered with lids or wax paper
3. Limiting the time leftovers are saved to 36 hours
4. Refrigerating warm or cold leftovers immediately

7-18. You are planning to make a beef loaf for dinner and receive the chopped and diced onions, celery, and green peppers before time to start mixing the loaf. What should you do with the vegetables?
1. Put the vegetables in ice water
2. Mix the vegetables with the bread
3. Refrigerate the vegetables in shallow covered pans
4. Start mixing the beef loaf immediately

Learning Objective: Indicate the correct method for thawing fish and poultry.

7-19. What is the preferred method of thawing frozen meat?
1. Leave covered with the inside wrappings and thaw at temperatures between 36° and 38°F
2. Unwrap and thaw at about 40°
3. Leave in sealed container and thaw at the normal room temperature of 72°F
4. Leave covered with inside wrappings and thaw at the normal room temperature of 72°F

7-20. Which of the following statements is/are correct concerning the time required to thaw meat?
1. The size of the cut
2. The air circulation and temperature
3. The bone-in or boneless state of the meat
4. All of the above

7-21. The recommended procedure for preparing breaded fish products is
1. prepare product while it is frozen
2. allow product to thaw at room temperatures
3. thaw slowly at 36°F to 38°F
4. prepare well in advance to ensure thorough cooking

7-22. When baked fish has completed cooking it will
1. flake easily with a fork
2. register 375°F
3. curl at the ends
4. have a velvety appearance

7-23. Slices cut crosswise from large fish are called
1. steaks
2. fillets
3. roasts
4. cakes

7-24. What is the correct method for thawing frozen fish?
1. Place unopened packages in pan and run hot water over them for 30 minutes
2. Thaw at 36° to 38°F in unopened packages
3. Place unopened packages in oven at a temperature between 75° to 80°F for 1 hour
4. Thaw in unopened packages at room temperature

7-25. When you are cooking fish, additional fat or oil is required in order to keep the fish moist and palatable. Which of the following items should you use for this purpose?
1. Butter or shortening
2. Melted fat or oil
3. Sliced bacon or thinly sliced salt pork
4. Each of the above may be used

Learning Objective: Recognize the various types of soups, gravies and sauces; determine the correct methods for their preparation.

7-26. What are the three basic types of soup?
1. Light, medium, and heavy
2. Light, heavy, and cream
3. Light, dark, and clear
4. Medium, heavy, and dark

7-27. What type of soup do you usually serve with a heavy meal?
1. Cream
2. Medium
3. Light
4. Dark

7-28. What method of processing is used to prepare a vegetable puree?
1. Parboil the vegetable and add the soup stock
2. Add gelatin to the vegetable
3. Cream the vegetable
4. Put the vegetable through a sieve

7-29. To make green pea soup from a dehydrated preparation, you add the dehydrated soup to
1. cold water, then simmer it
2. cold water, then bring it to a boil
3. hot water, then bring it to a boil
4. boiling water, then simmer it

7-30. If the soup you prepare is too salty, how may you correct this?
1. Add a little sugar to the soup
2. Add rice or noodles to the soup
3. Dilute the soup with fresh stock
4. Simmer slices of raw potato in the soup

7-31. Lumpy gravy is commonly caused by
1. cooking the roux too long
2. adding flour to hot liquid
3. using starch as the thickener
4. undercooking the roux

7-32. Which of the following liquids should be used for making a cream or white sauce?
1. Water
2. Soup stock
3. Milk
4. Cream of tartar

Learning Objective: Recognize the correct procedures for procuring, preparing and serving vegetables, fruits, and salads.

7-33. Which, if any, of the following is the most common reason for vegetables being left uneaten by dining facility patrons?
1. Patron does not like vegetables
2. Vegetables are improperly prepared and served
3. Too many other items on the menu
4. None of the above

7-34. The Navy procures vegetables in which of the following forms?
1. Canned only
2. Dehydrated and dried only
3. Frozen, fresh, canned, and dehydrated
4. Fresh and canned only

7-35. In order to prepare a more palatable meal, the liquid from canned vegetables should be
1. thrown away
2. used in soups, gravies or sauces
3. poured over other foods to increase vitamin content
4. used in a dressing for a vegetable salad

7-36. The Navy uses dehydrated vegetables for which of the following reasons?
1. They are easy to prepare
2. They are convenient to store
3. They ensure portion control
4. All of the above

7-37. A small envelope containing a chemical that promotes dryness is often enclosed in packages of dehydrated vegetables. This chemical is activated
1. lime
2. carbon
3. charcoal
4. chlorine

7-38. What procedure should you use when the recipe card specifies that a frozen vegetable should be partially thawed prior to cooking?
1. Remove from freezer and thaw at room temperature
2. Remove from freezer, take vegetables from package and thaw at room temperature
3. Remove from freezer and place in chill box in its original container until partially thawed
4. Remove from freezer and run hot water over packages until touch test indicates that partial thawing has been accomplished

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In questions 7-39 through 7-42 select from column B the cleaning method that should be used for each fresh vegetable in column A.

	A. Vegetable	B. Cleaning Method
7-39.	Carrots	1. Soak in cold, salted water
7-40.	Broccoli	2. Scrub with brush
7-41.	Celery	3. Wash in several changes of cold water
7-42.	Spinach	4. Soak in warm water

7-43. Assume that a shipment of cabbage appears wilted and tasteless. Which of the following methods could you use to improve its flavor and appearance?
1. Place the cabbage in ice water until freshened, then keep cool and damp until it is used
2. Place the cabbage in ice water until it is freshened; then add baking soda while it is cooking
3. Let the cabbage stand in water at room temperature until it is freshened, then cook in a covered pot
4. Let the cabbage stand in water at room temperature until it is freshened; then cook in boiling water for a longer than normal period

7-44. Which of the following procedures is NOT recommended for cooking vegetables?
1. Cooking vegetables that are to be heated in cream sauce for a minimum length of time
2. Cooking vegetables quickly
3. Using a pinch of soda in the water
4. Using the least possible amount of water in boiling vegetables

7-45. A thin coating of lemon syrup will help prevent pared fruits from discoloring. What fruits tend to discolor most quickly after they are pared?
1. Peaches and pineapple
2. Pineapple and melons
3. Melons and bananas
4. Bananas and peaches

7-46. Assume that you have some frozen peaches which will be served for dessert in two or three days. When should you place them in the chill space for thawing?
1. 48 hours before serving
2. 24 hours before serving
3. 12 hours before serving
4. 6 hours before serving

7-47. How should you prepare dried fruit, such as prunes or dates?
1. Soak it overnight, then cook with added sugar and water
2. Add sugar and water and boil the fruit until tender
3. Soak it briefly, cook and add any needed sugar when cooking is completed
4. Soak it briefly, add sugar, and simmer it until tender

7-48. How far in advance of serving time should salad greens be prepared?

1. At least 12 hours before serving time
2. At least 6 hours before serving time
3. At least 4 hours before serving time
4. As close to serving time as possible

7-49. Which of the following forms of vegetables may be used in salads?

1. Fresh only
2. Fresh or canned only
3. Canned only
4. Fresh, canned, or dehydrated

7-50. Which of the following salads may be served as the main course?

1. Chicken salad
2. Tuna fish salad
3. Macaroni and ham salad
4. Each of the above

7-51. The salad dressing for a fruit salad should be added how far in advance of serving time?

1. At least 12 hours before serving time
2. At least 6 hours before serving time
3. At least 4 hours before serving time
4. As close to serving time as possible

7-52. Which of the following should you consider when selecting a dessert for a particular meal?

1. Was the meal light or heavy
2. Was the meal sweet or tart
3. Was the meal highly or mildly seasoned
4. All the above should be considered

7-53. When you are preparing sandwiches, which of the following breads would be the most desirable?

1. Fresh baked rye bread
2. Day old bread
3. French style bread
4. Toasted raisin bread

7-54. Bread will retain its freshness for approximately three days if it is stored at temperatures ranging between

1. 45°F to 55°F
2. 55°F to 65°F
3. 65°F to 75°F
4. 75°F to 95°F

7-55. After sandwich preparation has been completed, which of the following storage techniques is recommended?

1. Individually wrap and store sandwiches
2. Use dampened cloth or towel to retain moisture
3. Immediately stack the sandwiches in a cardboard box
4. Request authorized representative to pick up sandwiches

Learning Objective: Recognize the different types of cereals and identify the proper cooking procedures.

7-56. Cereal is procured in three different forms for the Navy. Which of the following is NOT procured for the Navy dining facility?

1. Instant
2. Dehydrated
3. To be cooked
4. Ready-to-eat

7-57. Which, if any, of the following cereals would require a long cooking period?

1. Slow or long term cereal
2. Regular or old fashioned cereal
3. Paste or starch cereal
4. None of the above cereals

Learning Objective: Recognize different types and uses of eggs.

7-58. Eggs have several uses in food preparation. Which of the following would NOT be a suitable use for eggs?

1. To leaven cakes
2. To thicken soups
3. To garnish
4. To bind ingredients together

7-59. The use of bakery type whole eggs should be used for which of the following purposes?

1. Preparing scrambled eggs
2. Preparing salad dressings
3. Preparing baking products
4. Preparing egg salad

7-60. If you are using dehydrated eggs it is recommended that you sift or stir them before you weigh or measure them for the purpose of
1. obtaining accurate weights or measures
2. inspecting them for foreign matter
3. increasing the temperature of the eggs to the room temperature
4. incorporating air into the egg mixture

Learning Objective: Recognize the proper procedures for the preparation of beverages.

7-61. The Armed Forces Recipe Service contains over 1,100 recipes. Each section is divided by using a letter from the alphabet system. Under what section of AFRS would you find the beverage recipes?
1. C
2. L
3. O
4. P

7-62. The proper brewing of coffee includes several important steps. Which of the following is NOT a correct step?
1. Always use fresh coffee grounds
2. Ensure the equipment is clean
3. Allow coffee to boil only three minutes
4. Keep serving temperature range between 175°F to 185°F

7-63. If you are preparing hot tea using loose tea, the tea should be strained after it has steeped
1. 5 minutes
2. 7 minutes
3. 10 minutes
4. 15 minutes

7-64. The preparation of tea should be scheduled so that it will be served no longer than how many minutes after it has been prepared?
1. 15 minutes
2. 30 minutes
3. 45 minutes
4. 60 minutes

Assignment 8

Baking

Textbook Assignment; Pages 188 - 218

Learning Objective: Indicate Characteristics and purposes for various baking ingredients and specify the interaction resulting from combining ingredients.

8-1. What is an important function of gluten in breadmaking?
1. It gives the dough expansion qualities
2. It regulates dough temperature.
3. It acts as a leavening agent.
4. It produces carbon dioxide gas.

8-2. The term "strong flour" refers to a
1. soft wheat flour with poor quality gluten
2. hard wheat flour with good quality gluten
3. soft wheat flour with high fat content
4. hard wheat flour with high fat content

8-3. Which of the following food elements is found in greater proportion in soft flour than in strong flour?
1. Minerals
2. Carbohydrates
3. Protein
4. Gluten

8-4. Flour contains enzymes that assist the action of the yeast in bread fermentation. What enzyme is instrumental in the production of carbon dioxide?
1. Protease
2. Lactase
3. Diastase
4. Maltase

8-5. Water performs all of the following functions in bread dough except
1. dissolving gluten
2. controlling consistency and temperature of the dough
3. dissolving and distributing sugar and salt throughout the dough
4. enabling enzymes and yeast to act

8-6. Common leavening agents used in baking are
1. air, steam, and carbon dioxide gas
2. steam, carbon dioxide gas, and shortening
3. carbon dioxide gas, shortening, and air
4. shortening, air, and steam

8-7. Air is NOT forced into a batter by which of the following?
1. Creaming
2. Sifting
3. Heating
4. Beating

8-8. What food does yeast consume as it reporduces itself?
1. Alcohol
2. Salt
3. Flour
4. Sugar

8-9. Active dry yeast should be dissolved in water before use. Indicate (A) the recommended water temperature and (B) how long in advance of use should the yeast be dissolved?
1. (A) 125° - 130°F (B) 20 minutes
2. (A) 95° - 100°F (B) 10 minutes
3. (A) 105° - 110°F (B) 5 minutes
4. (A) 115° - 120°F (B) 15 minutes

8-10. Under what conditions is baking soda a leavening agent?
1. When used in carefully measured amounts
2. When used in combination with an acid
3. Only when used with buttermilk
4. When used in cakes or cookies only

8-11. Baking soda, as a leavening agent , is not as reliable as baking powder because it
1. is difficult to determine results in advance
2. requires an acid with which to interact
3. cannot be measured as accurately as baking powder
4. can only be used with buttermilk

8-12. The term "double acting" which refers to the baking powder used by the Navy means that
1. one ingredient acts during mixing and a second acts after it has been heated
2. it acts twice as fast
3. it has twice as much leavening power
4. it will act in either dough or batter

8-13. The use of salt in yeast-leavened products does all of the following except
1. controls fermentation
2. adds flavor
3. hastens fermentation
4. strengthens gluten

8-14. The use of too little salt in bread making will result in a coarse finished product and too much salt will result in a salty, soggy product. Refer to figure 9-1 in the text. How much salt would you use if you were increasing the recipe to use 31 pounds of flour?
1. 3 oz
2. 6 oz
3. 9 oz
4. 12 oz

8-15. Which of the following statements concerning sugar is correct?
1. Brown sugar is just as sweet as white sugar.
2. Brown sugar adds flavor in addition to sweetness.
3. An equal amount of brown sugar may be substituted for white sugar in any recipe.
4. All sugars are an important energy food for enzymes.

8-16. Fat type shortening rather than oil is considered for bread dough because it
1. can be more thoroughly distributed
2. saturates more of the flour
3. liquifies at room temperature
4. improves the flavor of the dough

Questions 8-17 through 8-20 are statements concerning shortenings used in baking. Judge each question as True or False.

8-17. Butter should not be used as a shortening.

8-18. Shortening compounds are composed of deodorized animal fats only.

8-19. The Navy uses two types of shortenings: general purpose and emulsifier type.

8-20. If your recipe specifies bakery type shortening, you should not substitute general purpose shortening.

8-21. For best results, what type of milk should you use in making bread?
1. Fresh whole milk
2. Nonfat dry milk style A
3. Fresh nonfat milk
4. Sterilized whole milk

8-22. What is the maximum amount of nonfat dry milk that can be safely added to dough containing 25 pounds of flour?
1. 6 oz
2. 8 oz
3. 1 lb 3 oz
4. 1 lb 8 oz

8-23. You are mixing a sweet dough and using fresh eggs. What action, if any, should you take to ensure that the eggs are the proper temperature at the time they are added to the dough?
1. Remove them from the refrigerator in time for them to reach room temperature.
2. Use them just as they are taken from the refrigerator.
3. Remove them from the refrigerator and quickly bring to above room temperature.
4. Take no action; their temperature is unimportant.

8-24. You are using dehydrated egg mix in a quick bread recipe and sifting the egg mix in with the other dry ingredients. When, if needed, would you add the water normally required to reconstitute the eggs?
1. Add it immediately after the egg mix.
2. Add it after mixing is complete if the dough is too stiff
3. Add it with the other liquids.
4. Additional water is not needed.

8-25. What precaution, if any, should you observe when handling reconstituted egg mix?
1. Do not hold longer than overnight.
2. Reconstitute them immediately before use.
3. No additional precaution; reconstitution does not affect keeping quality.
4. Use them within 1 hour after reconstituting.

Learning Objective: Specify correct steps to be taken when preparing baking, and handling yeast and quick breads.

8-26. Why must bread dough be thoroughly mixed?
1. To make it smooth
2. To distribute the ingredients evenly
3. To fully develop the gluten
4. All of the above

8-27. You have just finished baking a batch of bread. It has a coarse texture and poor flavor. What probably caused this condition?
1. Fermentation time was too long.
2. Fermentation temperature was too high
3. Fermentation time was too short.
4. Fermentation temperature was too low.

8-28. Time alone is not an absolute means for determining when a dough is ready for punching. You must also test it by pressing lightly with a finger tip. The dough is ready for punching if the impression
1. remains unchanged
2. closes up immediately
3. recedes slightly
4. doubles in size

8-29. The baking term "makeup" refers to
1. the additional proofing period after panning the dough
2. adding flour to make up for baking loss
3. the first proofing period of the dough
4. forming the dough into loaf shape for proofing

8-30. Before placing the loaves in the bread pans for baking, the pans should be prepared by
1. lightly greasing them
2. lightly dusting them with flour
3. applying a heavy coating of oil
4. greasing and flouring them

8-31. Bread dough receives its final proofing immediately after it is
1. punched
2. scaled
3. molded
4. panned

8-32. Baking time is affected by the (a) size of the baking pans, (b) amount of dough scaled into each pan, (c) overload.
1. B only
2. A and B only
3. A and C only
4. A, B, and C

8-33. What, if any, sequence should be observed when removing the baked loaves from the oven?
1. First in, first out.
2. Last in, first out.
3. First in, last out.
4. No sequence is necessary.

8-34. After removing the baked loaves from the pans, what should you do next to provide proper handling for the bread?
1. Place it in the bread storage cabinet.
2. Wrap it immediately to prevent loss of moisture.
3. Place it on racks for thorough cooling
4. Cover it with brown paper to ensure slow cooling.

8-35. Rope, a condition in bread caused by bacteria, has a characteristic odor similar to which of the following?
1. Rotten eggs
2. Overripe cantaloupe
3. Moldy hay
4. Overaged cheese

8-36. Dough will be most resistant to rope bacteria if it
1. is fermented in areas having both high temperature and high humidity
2. is kept at a temperature of 80°F
3. has a low acidity
4. is kept at a temperature of 129°F

8-37. The most efficient way to prevent overage bread in the storeroom is to
1. throw out any loaves more than 3 days old
2. plan the baking schedule so that overstocking does not occur
3. use stale bread for crumbs and crotons
4. issue it for immediate use

8-38. Which of the following factors would be most likely to result in bread mold?
1. Overcooking
2. Storage in a dark refrigerator
3. Storage in a warm, moist room
4. Excessive proofing

8-39. What is the probable cause when mold appears on bread in the storeroom?
1. Mold spores in the oven
2. Mold spores in the raw ingredients
3. Improper handling after baking
4. Each of the above

8-40. Danish pastry differs from regular sweet dough pastry in that it
1. is shaped differently
2. is heavier
3. is a larger pastry
4. has a flaky texture

8-41. Which of the following bakery products would you make with sweet dough?
1. Bear claws
2. Turnovers
3. Sandwich rolls
4. Muffins

8-42. Which of the following breads is made with a quick-acting leavening agent and has a relatively short time requirement for mixing and baking?
1. Raisin buns
2. Twists
3. Muffins
4. Twin rolls

8-43. After panning, how long may biscuits be held in the refrigerator before baking time?
1. Overnight
2. One hour or more
3. Ten minutes
4. Only while preheating ovens

Learning Objective: Recognize the purposes of various ingredients used in cake baking and indicate correct procedures to be followed when mixing and baking the different types of cakes.

8-44. What are the three types of cakes?
1. Batter, sponge, and chiffon
2. Foam, batter, and sponge
3. Chiffon, foam, and batter
4. Sponge, chiffon, and foam

8-45. Which of the following common batter ingredients is omitted when you make foam cakes?
1. Soft wheat flour
2. Shortening
3. Sugar
4. Eggs

In questions 8-46 through 8-49 select from column B the cake ingredient that performs the function listed in column A.

A. Function	B. Ingredient
8-46. Brings out the flavor of other ingredients	1. Sugar 2. Eggs
8-47. Combines and activates all of the ingredients	3. Liquid 4. Salt
8-48. Softens flour protein and starches	
8-49. Furnishes structure, flavor, and moist texture	

8-50. What is the baking term used to denote the amount of batter used in a certain size cake pan?
1. Panning
2. Scaling
3. Dividing
4. Molding

8-51. What should be done to distribute the cake batter evenly after the right amount of batter has been poured in the pan?
1. Spread with a spatula
2. Shake the pan gently
3. Rap the pan on the work bench
4. Stir vigorously for 1 minute

8-52. When baking is completed and you have removed the pans of cake from the oven, the next step is to
1. frost the cakes immediately
2. cover them for an hour to cool
3. cool them for a minimum of 10 minutes and then remove the cakes from the pans
4. cool them for 10 minutes in the pans, remove the cakes, and frost immediately

Learning Objectives: Indicate the proper procedures to be followed when mixing and baking various types of cookies.

8-53. What should be done to the dough for rolled cookies to make it easily rolled and handled?
1. Refrigerate it before rolling
2. Add slightly less flour than stated in the recipe
3. Roll it on a warm surface
4. Grease the rolling pin

8-54. Which type of cookie is usually mixed one day and baked the next?
1. Drop cookie
2. Bar cookie
3. Refrigerator cookie
4. Rolled cookie

8-55. How many cookies should a 22-inch strip of dough for bar cookies yield?
1. 11
2. 12
3. 13
4. 14

Learning Objective: Specify correct techniques to be followed in making pie crusts and the various ways of completing the product for variety and palatability.

8-56. What is the function of water in pie crust dough?
1. It binds the other ingredients together.
2. It cools the dough during mixing.
3. It permits mixing with an electric mixer.
4. It makes the crust well-bound and tender.

8-57. To produce a fine textured pie crust, fats should be mixed with the flour until the dough mixture has the consistency of
1. smooth cream sauce
2. coarse corn meal
3. stiff cookie dough
4. soft bread dough

8-58. Which of the following must you avoid if you are to produce good pie crusts?
1. Letting the dough stand after mixing
2. Overmixing the dough
3. Using shortening that is 100 percent fat
4. Mixing the dough with your fingers

Learning Objective: Recognize the correct operating and cleaning procedures and safety precautions to observe for bakeshop equipment.

8-59. What is the dough capacity of a 3-barrel mixing machine?
1. 920 lb
2. 980 lb
3. 1,020 lb
4. 1,080 lb

8-60. How do you control the temperature of the dough mixed in the dough mixer?
1. By regulating a thermostat on the mixer
2. By mixing at high or low speed
3. By controlling the temperature of the water
4. By controlling the temperature of the flour

8-61. When should a bread mixer be cleaned if it is being used to mix one dough after another?
1. After each dough is mixed
2. Immediately after the last dough is mixed
3. At the end of each day
4. At the end of the work week

8-62. How many pounds of flour would you use in filling a 3-foot dough trough?
1. 15
2. 50
3. 150
4. 300

8-63. The fermentation area that is used for conditioning dough and cooling baked bread is called a
1. dough proofer
2. dough trough
3. dough mixer
4. dough scaler

8-64. What is the minimum length of time required for a dough proofer to reach the proper proofing atmosphere?
1. 20 min
2. 30 min
3. 40 min
4. 60 min

8-65. You have bread dough in the proofer and the proofer at the specified temperature and humidity. You judge when to remove the dough by
1. observing that the dough has stopped rising
2. following time instructions in the recipe
3. observing the volume of the dough in the pans
4. smelling the dough to determine if fermentation is completed

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In questions 8-66 through 8-68 select from column B the piece of equipment that should be cared for in the manner described in column A.

	A. Care and Cleaning	B. Equipment
8-66.	Sweep out and scrub daily with hot, soapy water, rinse, and dry	1. Bake ovens 2. Dough proofer
8-67.	Scrape clean, wash with damp cloth, and avoid spilling water	3. Dough trough 4. Bread mixer
8-68.	Clean after each use, do not overload, lubricate when needed	

8-69. Navy bake ovens are preheated for use by first turning the switches to
1. "low" position
2. "medium" position
3. "high" position
4. "low," then "medium," then "high" position

8-70. What method do you use to clean a scale?
1. Wash and rinse in 180°F water, and air dry.
2. Wipe down with soapy water and rinse in dishwashing machine.
3. Wipe down with soapy water and rinse without immersing.
4. Wash and rinse in 180°F water and dry with dish cloth

8-71. Assume that you are blueing bread pans. After they have turned blue from heating in a 410°F oven, you remove and lightly grease them. You should next put them back in the oven at a temperature of
1. 400°F or higher for 30 minutes
2. 250°F or higher for 30 minutes
3. 275°F for 30 minutes
4. 275°F for 60 minutes

8-72. Proper care of muffin tins includes all of the following actions except
1. greasing the tins before use
2. flouring of tins after greasing
3. cleaning tins after use
4. greasing tins after use

Assignment 9

Food Service

Textbook Assignment: Pages 218 - 234

Learning Objective: Recognize the preparations that are necessary for a smooth operating enlisted dining facility.

9-1. Sanitary and efficient food service begins in the galley where the food is prepared.

9-2. Who supervises the planning and the serving line to ensure that it is operating smoothly and rapidly?
1. Leading E3 assigned to the rotational pool
2. Senior MS
3. Senior baker
4. Dining hall master-at-arms

● Questions 9-3 through 9-5 are statements concerning dinnerware. Judge them True or False.

9-3. Dinnerware is washed after each meal and made ready for the next meal.

9-4. Trays, bowls, cups, and glasses must be located at the head of the serving line.

9-5. All items of dinnerware should be inspected to ensure that they are spotlessly clean.

9-6. How often should an inventory be taken to ensure that there will be a sufficient amount of dinnerware to last the entire serving period?
1. After each meal
2. Daily
3. Weekly
4. Monthly

9-7. Which of the following practices is recommended to speed up service on the serving line?
1. Dishing up hot foods ahead of time
2. Slicing all meat in the galley
3. Posting the current menu near the front of the line
4. Keeping extra containers of vegetables under the counter

9-8. Who establishes the hours for the serving of meals in the enlisted dining facility?
1. Chief MS
2. Food service officer
3. Supply officer
4. Commanding officer

9-9. Before placing any food on the steam table, when should you have checked the steam table to ensure that it is clean and sanitary?
1. After the last meal
2. Before each meal
3. After the last cleaning
4. At the beginning of the day

9-10. To keep foods hot on the serving line, the water in the steamtable should be kept at what temperature?
1. 120° - 140°F
2. 140° - 160°F
3. 160° - 180°F
4. 180° - 200°F

9-11. In order to serve roast beef at the proper temperature, you should slice it in what manner?
1. In the galley and place the slices in stacks on the line
2. In the galley and arrange the slices neatly in serving pans
3. On the line as the customers come through
4. On the line and place the slices in stacks ready for serving

9-12. Which of the following garnishes would be disapproved for use with Navy meals?
1. Chopped parsley with creamed potatoes
2. Pimento bits with deviled eggs
3. Fluted paper holders for tip of chop bone
4. Walnut halves to top a banana cream pudding

9-13. Which of the following items has/have what is considered to be a "built in" garnish?
1. Tossed vegetable salads
2. Beef stew
3. Crusty browned casseroles
4. All of the above

9-14. To which of the following documents do you refer for information regarding the garnishing of various foods on the menu?

1. Subsistence Report (NAVSUP Form 1059-1)
2. Food Preparation Work Sheet (NAVSUP Form 1090)
3. Menu Draft (NAVSUP Form 1092)
4. All of the above

9-15. Flowers carved from carrots, radishes and green peppers are not recommended as garnish for ordinary meals for which of the following reasons?

1. They are too expensive
2. They are not attractive
3. They are inedible
4. They require too much preparation time

9-16. What type containers should you use when serving vegetables such as creamed potatoes or broccoli?

1. Deep insert
2. Flat insert
3. Shallow insert
4. Curved insert

Learning Objective: Specify the proper techniques to be observed in the serving of food and carving of meats.

9-17. You are in charge of a serving line. Which of the following instructions should you give the serving personnel?

1. The order in which the items will be placed on the serving line
2. How each item is to be served
3. Where each item is to be placed on the tray
4. All of the above

9-18. Assume you are serving vegetable soup. Which of the following would not be a correct practice?

1. Stirring the soup whenever you have an opportunity
2. Dipping from the bottom of the kettle
3. Pouring the soup slowly into the center of the bowl
4. Holding the ladle firmly at about the middle of the handle

9-19. What is the recommended way of serving food items such as lyonnaise potatoes from a shallow insert?

1. From the front of the pan towards the back in an orderly system across the pan
2. From the back of the pan towards the front in an orderly system across the pan
3. From the center of the pan towards the front and then towards the back
4. From side to side and front to back

9-20. Which of the following statements concerning the use of serving utensils is NOT correct?

1. Using a good turner for lifting such things as portions of steaks or scrambled eggs
2. Using a scoop for serving mashed potatoes
3. Using a ladle for dipping sauce or gravy from a shallow pan
4. Using a perforated spoon to serve peas or boiled cabbage

9-21. Which of the following foods are best served with the use of tongs?

1. Steak
2. Fried chicken
3. Potatoes
4. Carrots

9-22. The MS assigned to supervise the serving line has which of the following responsibilities?

1. To ensure that servings are equitable
2. To assure that the amounts served are not more than the individual wants
3. To make sure that each person is served a portion of each item on the menu to ensure a proper diet
4. Both 1 and 2 above

9-23. In order to keep from having a delay in a long serving line you should

1. keep a tray of servings under the counter
2. send someone to the galley when servings are exhausted
3. tell the customers they will be served at their seats
4. send someone to the galley when only 15 servings are left

9-24. What is the proper method of slicing cooked meat?

1. With the grain
2. At right angles to the cut surface
3. Across the grain
4. Diagonally to the grain

9-25. How long should roasts be allowed to rest before they are carved?
1. 5 min
2. 10 min
3. 20 min
4. 30 min

9-26. To protect the cutting edge of the knife, the use of which of the following is recommended when you are slicing cooked meat by hand?
1. Sheet pan
2. Metal table top
3. Rubber cutting board set in a sheet pan
4. Wooden carving board set in a sheet pan

● Question 9-27 is based on the following situation: MSC Kelly sets up a salad bar in the enlisted dining facility for training purposes. The following arrangements were made: (A) locates the bar near the entrance to the dining area and 10 feet from the hot food serving line; (B) sets serving trays at the entrance to the salad bar; (C) uses a wide table pushed against the wall to give room for two rows of containers; (D) arranges for a waterproof tabletop tray to accommodate crushed ice; and (E) supplies a variety of serving utensils, such as tongs, basting and straining spoons, and small ladles.

9-27. Kelly asks you to suggest a way to improve the arrangements. Which of the following suggestions should you make?
1. Move the bar so that the customers reach it after going through the serving line.
2. Move the table away from the wall and direct traffic down both sides of the table.
3. Assign someone to serve the salads and remove the selfservice utensils.
4. Set the trays at the beginning of the hot food line.

9-28. What should you do with cooked salad dressings that remain on the salad bar after serving?
1. Return them to their containers and refrigerate them at once
2. Cook them for five minutes and retain for serving later.
3. Save them to use for sandwich spreads.
4. Discard them.

In questions 9-29 through 9-33 select from column B the serving utensil that is most usgful in serving the food listed in column A.

	A. Food	B. Serving utensil
9-29.	Thin salad dressings	1. Tongs
		2. Perforated spoons
9-30.	Individual salads	3. Small ladles
9-31.	Cole slaw and cucumber and onion salad	4. Food turners
9-32.	Carrot sticks and celery	
9-33.	Tossed green salads	

Learning Objective: Indicate the sanitary practices to be observed in the dining area.

9-34. What is the recommended method for cleaning table tops in the dining area?
1. Using clean rags, scouring powder, and clean water
2. Using a sponge and a chlorine or other sanitizing solution
3. Using a sponge, scouring powder, and soapy water
4. Using clean rags and a detergent solution

9-35. How often should salt, pepper, and condiment containers be refilled?
1. After each meal
2. Once a day, preferably before the noon meal
3. Before the morning meal
4. After the evening meal

9-36. Which of the following utensils would you use to serve thick and thin salad dressings?
1. Basting spoons
2. Scoops
3. Small ladles
4. Iced teaspoons

Learning Objective: Specify the procedures for maintaining the standards of cleanliness and sanitation which must be observed in wardroom spaces.

9-37. Cleanliness is essential to good sanitation and is a major factor in providing more pleasant surroundings for members.

9-38. Normally, it will be necessary to clean the wardroom only before reveille and again before the person on watch secures for the night.

9-39. The wardroom air conditioning equipment maintains a comfortable temperature during the day and evening. However, when you first enter the room in the morning, the air feels heavy and has a stale odor. What, if anything, should you do to correct this situation?
1. Secure the air conditioning equipment.
2. Open up the room and air it out.
3. Use an air freshener.
4. Ignore it; this is characteristic of air conditioned spaces.

Learning Objective: Identify the serving techniques required for various situations and choose the proper response for instances involving protocol which can normally be expected to occur in the wardroom.

9-40. What form of table service is considered to be the most elaborate?
1. American style
2. Family style
3. French Service
4. Ala carte style

9-41. Which of the following types of service may be used daily in the wardroom dining facility?
1. Family and American style
2. Cafeteria and buffet style
3. Ala carte only
4. Family, American, cafeteria, buffet and ala carte

● Questions 9-42 through 9-44 consist of statements about cafeteria service. Judge each question as True or False.

9-42. All officers must be ready to eat at the same time.

9-43. Fewer personnel can serve greater numbers in less time.

9-44. There is less plate waste since the diner usually helps himself to the foods he prefers.

● Questions 9-45 through 9-47 consist of statements about buffet service. Judge each question as True or False.

9-45. Buffet service is used only for formal occasions.

9-46. Buffet service may be used when there are too many diners for all to be seated at the same time.

9-47. When the main course foods are served buffet style, desserts should always be served buffet style.

9-48. How should the tablecloth be spread when setting the table for a meal?
1. Over the silence pad
2. Beneath the silence pad
3. Over the green felt table cover
4. On the bare table

9-49. The dishes, glasses, and napkin placed on the table for one person are referred to by what term?
1. Buck
2. Setting
3. Cover
4. Service

9-50. In relation to the plates in a table setting, knives are placed on the
1. left side with the cutting edge away from the plate
2. right side with the cutting edge toward the plate
3. right side with the cutting edge away from the plate
4. left side with the cutting edge toward the plate

9-51. Which of the following steps is correct in setting the table for an informal meal?
1. Placing the coffee cup to the left of the water glass
2. Turning the knife edge away from the plate
3. Placing the napkin to the left of the fork
4. Placing the bread and butter plate directly above the knife and spoon

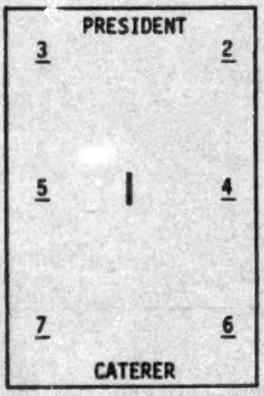
9-52. In a wardroom using a buck, the order of serving should begin with the
1. president, then the officer seated to his right
2. president, then the officer having the buck
3. officer having the buck, then the president
4. officer having the buck, then the officer seated to his right

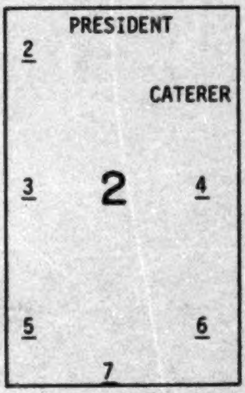
9-53. At a formal dinner, when should you remove the service plate?
1. After the coffee is served
2. After the main course is finished
3. After the soup course is finished
4. When the first course is served first

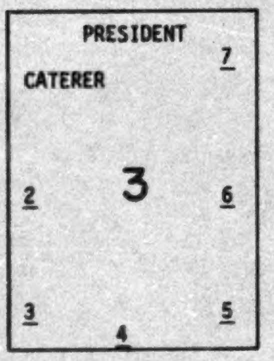
9-54. Officers are normally assigned permanent seating in the wardroom. These seating arrangements are based on
1. rank and time onboard
2. rank and age
3. rank and precedence
4. age and job title

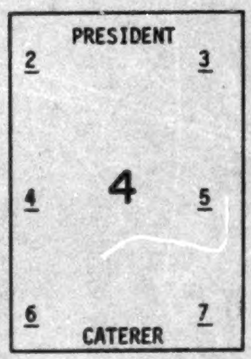
9-55. When the commanding officer does not have his own dining facility and eats in the wardroom, what position does he hold?
1. Caterer
2. President
3. Treasurer
4. Honored guest

9-56. Four wardroom tables are illustrated below. Choose the one which correctly portrays the seating arrangement according to rank.









- The following information and figure provide facts you will need in answering questions 9-57 through 9-60.

The following officers are assigned to a ship and eat in the wardroom:

Name and rank	Date of rank	Title
LT Carter	07-01-68	First Lieutenant
LTJG Martin	10-18-69	Navigator
ENS Finch	04-11-69	DCA
LTJG Herring	10-25-69	Caterer
LT Clerk	04-01-68	Engineer Officer
LCDR Beck	07-01-69	Executive Officer
LTJG Lewis	12-15-68	Supply Officer
LTJG Lowell	11-15-68	Operations Officer

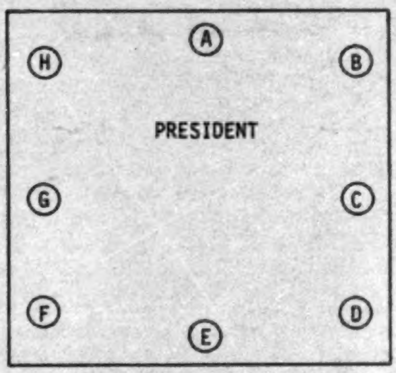


Figure 1.----Wardroom table.

9-57. At which table position does the caterer sit?
1. E
2. H
3. B
4. D

9-58. At which table position does LCDR Beck sit?
1. B
2. E
3. A
4. H

9-59. At which table position does LTJG Lewis sit?
1. F
2. E
3. C
4. B

9-60. The commanding officer has been invited to dinner. At which table position will he be seated?
1. A
2. B
3. H
4. E

9-61. What should you do with the silence pad when you are clearing the table after a meal?
1. Put the green felt cover over it.
2. Cover the pad with a clean tablecloth and then put the green felt cover over it.
3. Clean the pad thoroughly before putting a new tablecloth on top of it.
4. Remove the pad, reroll or refold and stow it.

Learning Objective: Identify the proper actions which should be taken in response to various problems that arise in the wardroom pantry.

9-62. As wardroom pantry supervisor, you are largely responsible for the success of any meal. In meeting this responsibility, you should ensure which of the following?
1. Each man knows his job
2. Only authorized persons are permitted in the pantry
3. All possible preparations are made in advance
4. All of the above

● Questions 9-63 through 9-66 are statements regarding pantry supervision. Judge each item as True or False.

9-63. Substitute foods should be kept on hand for emergency use.

9-64. Beverages which are to be served cold should be chilled before they are served.

9-65. After the meal, cloth napkins, if used, should be collected and taken to the pantry.

9-66. Normally, foods are cooked in the galley then brought to the pantry where they are portioned onto the dinner plates.

9-67. When breakfast and brunch are prepared "to order," pantry personnel are responsible for ensuring that
1. orders are taken correctly
2. the menu is adequate
3. food is prepared as ordered
4. the table is cleared promptly as the officers finish eating

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1. The following comments are hereby submitted: